National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reinforced Plastic Products Production Background Information Document - Vol II

PUBLIC COMMENTS AND RESPONSES

February 2003

Emission Standards Division

U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

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1.0 SUMMARY

On August 2, 2001, the U.S. Environmental Protection Agency (EPA) proposed national emission standards for hazardous air pollutant (HAP) emissions from reinforced plastic composites production operations at major source facilities (66 FR 40323). These proposed standards implemented section 112(d) of the Clean Air Act as amended in 1990 (CAA). There were 140 comment letters on the proposal (see Table 1-1), and the commenters consisted of trade associations, manufacturers, and associations representing State and local air pollution control agencies. Summaries of the comments, and the EPA's responses, are presented in this background information document (BID Volume II). This summary of comments and responses served as the basis for the revisions made to the rule between proposal and promulgation. Besides summarizing the comments and responses, this document also presents a summary of the significant rule revisions. This document supplements BID Volume I, "Hazardous Air Pollutant Emissions from the Production of Reinforced Plastic Composites - Background Information Document for Proposed Standards", May 2001, which is in the docket for this rulemaking as item II-A-18.

TABLE 1-1. LIST OF COMMENTERS ON THE PROPOSED MACT STANDARDS FOR REINFORCED PLASTIC COMPOSITES PRODUCTION

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-1	B. Natz SIRC
IV-D-2	P. Downs Waldorf Marble
IV-D-3	C. Volkman R.V.M.
IV-D-4	D. Miller Mainland Custom Marble, Inc.
IV-D-5	D. Malone Custom Quality Marble, Inc.
IV-D-6	S. Wetter Patrician Marble Company
IV-D-7	K. Ryan Patrician Marble Company
IV-D-8	R. Arnold Alamo Marble
IV-D-9	W. Sanders Alamo Marble
IV-D-10	B. Ruppert U.S. Army Acquisition Pollution Prevention Support Office
IV-D-11	L. Tanner 3M Environmental Technology and Services
IV-D-12	D. Goodwin Goodwin Environmental Consultants
IV-D-13	B. Holtzclaw Holtec, Ltd.
IV-D-14	K. Hall Jefferson County Dept. of Health, Alabama
IV-D-15	J. Messere School of Engineering, Indiana University
IV-D-16	E. Ashai Valspar Corporation

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-17	E. Ashai Valspar Corporation

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-18	E. Ashai Valspar Corporation
IV-D-19	R. Mordarski Glas-Craft
IV-D-20	G. Smith Citizens Action Coalition of Indiana and A. Knott
IV-D-21	B. Crowell Reichhold
IV-D-22	R. Sedlatschek Glastic Corporation
IV-D-23	M. Stevens Ashland Specialty Company
IV-D-24	D. Goad Kohler (Huntsville, AL, facility)
IV-D-25	D. Thorson Strongwell
IV-D-26	R. Allison Creative Pultrusions, Inc.
IV-D-27	V. Shah The Budd Company
IV-D-28	L. Denison Core Materials Corporation
IV-D-29	J. Voras ITW Composites Equipment
IV-D-30	J. Schweitzer Composites Fabricators Association (CFA)
IV-D-31	H. Toner International Cast Polymer Association
IV-D-32	J. Barker Strongwell
IV-D-33	J. Barker Strongwell
IV-D-34	R. E. Lide Union Carbide Corporation

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-35	L. Barton Premix
IV-D-36	D. Goad and M. Cassidy Kohler (Spartanburg, SC, facility)
IV-D-37	D. Goad and M. Cassidy Kohler (Brownwood, TX, facility)
IV-D-38	C. Peterson Xerxes Corporation
IV-D-39	M. Koepsel American Standard, Inc.
IV-D-40	D. Bemock Ashland Inc.
IV-D-41	K. Meashey Lockheed Martin Corporation
IV-D-42	P. Bennet Molded Fiber Glass Companies
IV-D-43	R. Wiler Haysite Reinforced Plastics
IV-D-44	J. Jambois Tecton Products LLC
IV-D-45	J. Robert Long Marine Concepts
IV-D-46	G. Naroth Marine Concepts
IV-D-47	J. Decker Marine Concepts
IV-D-48	G. Foskey Omega Pultrusion
IV-D-49	G. Foskey Carsonite International, Inc.
IV-D-50	K. Witt Able Body Corporation
IV-D-51	B. Kern Style Crest Manufacturing
IV-D-52	R. Wales

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
	MDAQMD/AVAPCD

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-53	B. Crowell Reichhold
IV-D-54	L. Baker Ashland Specialty Chemical Company
IV-D-55	J. Conway and D. Legros Bedford Reinforced Plastics, Inc.
IV-D-56	O. Dominguez National Aeronautics and Space Administration
IV-D-57	M. Frank The Boeing Company
IV-D-58	G. Lowe Lasco Bathware, Inc.
IV-D-59	R. Stout Fabwel, Inc.
IV-D-60	D. O'Neal Interplastic Corporation
IV-D-61	K. Anderson Monaco Coach Company
IV-D-62	W. Haak Owens Corning
IV-D-63	M. Yamada Northrop Grumman
IV-D-64	M. Cassidy Kohler, Co.
IV-D-65	Werner Co.
IV-D-66	B. Crowell Reichhold
IV-D-67	R. Oliver Fibergrate
IV-D-68	S. Kottman MK Industries
IV-D-69	M. Aker Aker Plastics Co.
IV-D-70	P. Felix Alaglass Pools

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-71	Charles Brown Aqua Glass Corporation
IV-D-72	M. Fleischaker and D. Ottaviano Arent Fox Attorneys at Law
IV-D-73	P. Yaroschak Department of the Navy
IV-D-74	K. Larkins Shook, Hardy, and Bacon
IV-D-75	J. McCabe Indiana Department of Environmental Management
IV-D-76	D. Foerter Institute of Clean Air Companies
IV-D-77	M. Hollenbeck Cook Composites
IV-D-78	R. Colby and B. Higgins STAPPA/ALAPCO
IV-D-79	L. Blankenship The Dow Chemical Company
IV-D-80	H. Rivera MAAX Southeast
IV-D-81	M. Thayer Smith Fibercast
IV-D-82	M. Howard Fleetwood Enterprises
IV-D-83	B. Johnson Dixie Cultured Marble CO., Inc.
IV-D-84	M. Rundle Marble Arch Products, Inc.
IV-D-85	G. Whiting Tiffany Marble, Inc.
IV-D-86	R. Holechek American Marble
IV-D-87	R. Krattli Cultured Marble Products, Inc.
IV-D-88	C. Baker

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
	Craig Baker Marble Co. Inc.
IV-D-89	J. Kohler Al-Co Products, Inc.

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-90	D. Coon Ashland
IV-D-91	R. Woodruff Custom Design Baths
IV-D-92	D. Sorenson American Marble Products, Inc.
IV-D-93	J. Smith FRP Supply Division, Ashland Distribution Company
IV-D-94	P. Bennett Molded Fiber Glass Companies
IV-D-95	J. Forsyth Forsyth Marble
IV-D-96	J. Steigmeyer Roma Marble, Inc.
IV-D-97	H. Toner International Cast Polymer Association
IV-D-98	John Schweitzer Composites Fabricators Association
IV-D-99	R. Scherba Elegant Marble Products
IV-D-100	D. Cannon CoMar Products, Inc.
IV-D-101	D. O'Neal Interplastic Corporation
IV-D-102	P. Gutierrez Accent Marble
IV-D-103	S. Kottman MK Industries
IV-D-104	G. Resnick Marble Design, Ltd.
IV-D-105	D. Choat Trinity Marine Products, Inc.

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-106	G. Loebel Custom Marble Products
IV-D-107	P. Felix Alaglass Pools
IV-D-108	W. Dannhauer Kalwall Corporation
IV-D-109	R. Markz Owens Corning
IV-D-110	W. Haak Owens Corning
IV-D-111	C. Peterson Xerxes Corporation
IV-D-112	G. Bolte Agean Marble Manufacturing
IV-D-113	E. Cheknis Accent Products
IV-D-114	D. Krieg The Dow Chemical Company
IV-D-115	H. Bost Florida Custom Marble, Inc.
IV-D-116	J. Perdue Nova
IV-D-117	G. Foskey Carsonite International
IV-D-118	G. Foskey Omega Pultrusion Incorporated
IV-D-119	P. Jones ICPA
IV-D-120	J. Schweitzer CFA
IV-D-121	J. Mauldin Marble Works, Inc.
IV-D-127	G. Benker Diamond Fiberglass Fabricators, Inc.
IV-D-128	W. Spidahl

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
	Nordic Fiberglass, Inc.

TABLE 1-1. (Concluded)

Item Number in Docket ID No. OAR-2003-0003 (formarly Docket No. A-94-52)	Commenter and Affiliation
IV-D-129	L. Barton Premix
IV-D-130	R. Hoffman Interplastic Corporation
IV-D-131	E. Ashai Lilly Industries
IV-D-132	D. McCrady Cambridge Industries
IV-D-133	B. Crowell Reichold
IV-D-134	P. Slone Autoform, Inc.
IV-D-135	J. Barker Strongwell
IV-D-139	R. Allison Creative Pultrusions
IV-D-140	J. Barker Strongwell
IV-D-143	J. Barker Strongwell
IV-D-147	J. Schweitzer CFA
IV-D-155	J. Schweitzer CFA
IV-D-157	J. Schweitzer CFA
IV-D-159	CFA
IV-D-162	CFA
IV-D-163	C. Peterson Xerxes
IV-D-164	C. Peterson Proform

2.0 CHANGES TO THE RULE FOLLOWING PROPOSAL

In response to comments received on the proposed NESHAP and further analysis, the following changes have been made.

2.1 Above-the-Floor Capture and Control Requirements for Existing Sources

In the proposed rule, existing facilities that are a small business as defined by the Small Business Administration (SBA) regulations at 13 CFR 121.201, and that emitted 250 tpy or more of HAP, or existing facilities that are not a small business and emitted 100 tpy or more of HAP, from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC manufacturing, mixing, and BMC manufacturing operations, were required to reduce the total HAP emissions from these operations by at least 95 percent by weight. In the final rule, this requirement now only applies to centrifugal casting and continuous lamination/casting operations, and the threshold has been changed to 100 tpy for both large and small businesses. This reduced the number of facilities we estimated would have to meet an above-the-floor requirement from 34 to 3, reduced the industry annualized costs of these NESHAP from $26.0 million per year to $20.5 million per year, and reduced the HAP emissions reduction estimate from 14,500 to 7,700 tpy. In addition, for centrifugal casting, the percent reduction requirement only applies to HAP emissions that are vented from the closed centrifugal casting mold. It does not apply to HAP emissions that occur from other operations such as pouring or spraying resin into an centrifugal casting mold while it is open.

2.2 Replacing the Point Value Equations with HAP Emission Factor Equations Based on the Unified Emissions Factors, and Changes to Centrifugal Casting HAP Emissions Factors

In the proposed rule, we used a group of equations called point value equations to determine surrogate HAP emissions factors. These factors were then used to rank existing facilities to determine existing source MACT floors for open molding operations. However, we specified that the point value equations were not considered HAP emission factors and, therefore, should not be used for HAP emissions reporting. This resulted in the potential for facilities to have to use two different sets of equations for HAP emissions reporting and MACT compliance determinations.

In the final rule, we have eliminated the point value equations and replaced them with HAP emission factor equations that are identical to HAP emission factor equations being used in this industry for HAP emissions calculations, called the Unified Emission Factors. Therefore, facilities now will have the same equations for MACT compliance determinations and HAP emissions calculations for HAP emissions reports.

For centrifugal casting we have retained the HAP emission factor equation in the proposed rule for sources that blow heated air through the mold during spinning and curing. For other centrifugal casters, we have created a new HAP emission factor equation based on more recent information. This new HAP emission factor significantly changes the numerical lb/ton value of the floor from the value in the proposed rule. However, it did not change the floor facility or the level of control a facility would need to meet the floor.

These new HAP emission factor equations were also used to re-rank existing facilities to establish the floor level of control for existing sources. Though this change did result in different floor values in lb/ton, it did not change the level of control actually required to meet the floor. However, as discussed below, our reanalysis did result in changes to some floors for other reasons.

2.3 MACT Floors for Existing Sources

There are several changes to the MACT floors for existing sources, and for new sources that emit less than 100 tpy for the combination of all open molding, centrifugal casting, pultrusion, SMC and BMC manufacturing, mixing, and continuous lamination/casting operations. These changes were a result of facilities submitting additional data that indicated our original analysis of their facility HAP emission factors were in error, or out of date.

For noncorrosion resistant resins applied using mechanical application, the proposed rule had different floors for filled and unfilled resins. The reason for separating filled and unfilled resins was that at the time of proposal, nonatomized resin application techniques were not available for filled resins. Since proposal, filled resins now can be applied using nonatomized spray. Therefore, we now have combined the two process/product groupings into one. Also, several facilities in this process/product grouping provided revised data. As a result, the floor level of control for noncorrosion resistant resins using mechanical application is a HAP emissions limit of 87 lb/ton. This limit requires a resin with no more than 38.4 percent HAP applied using nonatomized mechanical resin application techniques. At proposal, facilities could use a 42.8 percent resin (filled) or a 38 percent HAP (unfilled) resin and nonatomized mechanical resin application.

For mechanical corrosion resistant resin application, the revised floor is a HAP emissions limit of 112 lb/ton. This limit requires a resin with no more than 46.2 percent HAP and nonatomized mechanical resin application. At proposal, a resin HAP content of up to 48.3 percent was allowed if nonatomized mechanical resin application was used.

For manual application of tooling resin, the revised floor is 157 lb/ton. This allows a resin HAP content of 45.9 percent or less. At proposal, the maximum allowable HAP content was 39.9 percent.

For tooling gel coat, the revised floor is 437 lb/ton. This limits gel coat HAP content to 40 percent or less. At proposal, the limit was 38 percent or less.

For SMC manufacturing, the work practices required in the proposed rule were use of nylon film, folding the edges of the film, and covering the doctor box. In the final rule the requirements are a covered resin transport system to the doctor box, and the use of nylon-containing film.

For pultrusion operations producing parts with 1,000 or more reinforcements and a cross-sectional area of 60 square inches or more, we have changed the floor from 60 percent HAP emissions reduction to a work practice of air flow management.

In addition, we established three new floors for specialty resins and gel coats. These are shrinkage-controlled resins, fire retardant gel coats, and high performance gel coats. These specialty products were identified from comments received on the proposed rule.

2.4 Cleaning

In the proposed rule, we required that cleaning materials contain no HAP unless cleaning cured resin from application equipment. In the final rule, we have modified that requirement to allow HAP-containing cleaners to be used in closed systems such as closed tanks, and resin and gel coat delivery systems.

2.5 Compression/Injection Molding

In the proposed rule, we required that only one resin charge be uncovered at a time. We have clarified this requirement in the final rule to reflect that one charge may actually have to fill multiple molds. Also, we added a provision to allow the use of automated loaders and slitters. We also clarified that paste added to the mold, and in-mold surface coatings are considered part of the closed molding operation.

2.6 Averaging Provisions

In the proposed rule, we allowed facilities to average across all open molding operations and all centrifugal casting operations. The average was based on a 12-month rolling average calculated monthly. In determining compliance, the average for each month was calculated and then the monthly averages were averaged over a 12-month period. In the final rule, the 12-month average is based on a weighted HAP emission factor calculated from total resin and gel coat use over the 12-month period. This method will provide a more accurate value for the actual HAP emissions, in lb/ton, that the facility produced in the previous 12 months.

In the proposed rule, we did not allow pultrusion lines to average; each pultrusion machine had to meet the 60 percent reduction requirement for existing sources. In the final rule, we allow facilities to over-control some lines, and under-control (or leave uncontrolled) others, as long as the average reduction for all lines combined is 60 percent weighted by resin use. Also, we are allowing facilities to average the time that wet area enclosure covers are open across lines.

2.7 Pultrusion Compliance Options

In the proposed rule, we allowed pultrusion operations to use direct die injection as a compliance alternative to meet the 95 percent capture and control requirement. In the final rule, we are removing direct die injection as a compliance alternative because, based on industry data, it does not achieve 95 percent HAP emissions reduction. We still allow direct die injection as a compliance option to meet the 60 percent HAP emissions reduction requirement. We have also added another compliance option, preform injection, to meet a 60 percent HAP emissions reduction. We have also added a compliance option consisting of airflow management work practices, for pultrusion machines that produce large parts as set forth in the final rule.

2.8 Applicability

We made a number of changes dealing with rule applicability. First, we expanded the list of specific operations that are part of the source category, but are not subject to any control, reporting, or recordkeeping requirements. These operations include application of mold sealing and release agents, mold stripping and cleaning, repair of previously manufactured parts that is unrelated to collocated manufacturing operations, personal activities that are not part of the manufacturing operations (such as hobby shops on military bases), prepreg materials as defined in §63.5935, non-gel coat surface coatings, repair or production materials that do not contain resin or gel coat, and research or laboratory facilities as defined in section 112(c)(7) of the CAA. In addition, we exempted any facility that uses less than 1.2 tons per year of resin and gel coat, and research and development (R&D) facilities and R&D operations at manufacturing facilities.

2.9 Potential Overlap with the Boat Manufacturing NESHAP, 40 CFR 63, Subpart VVVV

In the proposed rule, we were silent concerning situations where a facility could be subject to both the Boat Manufacturing NESHAP, 40 CFR 63, subpart VVVV, and these NESHAP (subpart WWWW). In the final rule, we have added §63.5787 to clarify which subpart applies. In general, if your facility makes boat hulls and decks, or molds for boat hulls and decks, then 40 CFR part 63, subpart VVVV applies to you. If subpart VVVV does not apply to you, and you meet the applicability criteria in §63.5785 of subpart WWWW, then subpart WWWW applies. If you are subject to subpart VVVV, and also make reinforced plastic composite parts that are not used in boat manufacture, then both subpart VVVV and subpart WWWW may apply.

2.10 Determination of Resin and Gel Coat HAP Content

In the proposed rule, we stated that facilities could determine resin and gel coat HAP content using material safety data sheets (MSDS) or resin specification sheets. In the final rule, we have included §63.5797, which describes in more detail how to determine resin and gel coat HAP content. This new section also clarifies that only organic HAP are included in determining HAP content. The reason is that we have no data to indicate that any other HAP, such as inorganic HAP potentially present in pigments or resin solids, are emitted from the production process. We also now include a provision to account for normal manufacturing tolerances that occur in resin and gel coat manufacture.

2.11 New Source Floors

In the proposed rule, the MACT floor for all open molding and pultrusion operations located at new sources above a 100 tpy HAP emission threshold was a 95 percent weight reduction in HAP emissions. In the final rule, we have subcategorized open molding and pultrusion operations by part size. Open molding and pultrusion operations that manufacture large parts are not required to reduce HAP emissions by 95 weight percent, but must meet the same emission limits as existing sources. A large open molding part is defined as a part that, when the final finished part is enclosed in the smallest rectangular six-sided box into which the part can fit, the total interior volume of the box exceeds 250 cubic feet, or any interior sides of the box exceed 50 square feet. A large pultruded part is a part that exceeds an outside perimeter of 24 inches or has more than 350 reinforcements. All other new source MACT floors are unchanged.

3.0 APPLICABILITY

3.1 Non-Styrene or Non-Methyl Methacrylate (MMA) Resins

Comment: Three commenters (IV-D-57; IV-D-73; IV-D-63) requested clarification that the rule is not intended to regulate resins that do not contain styrene or methyl methacrylate. Commenters IV-D-57 and IV-D-73 point out that the preamble states that the rule only affects facilities that perform composite manufacturing operations involving resins and gel coats that contain styrene, but the text of the rule itself is not as clear on this point. Specifically, the preamble states "This source category is limited to those resins which contain styrene, either by itself or with a combination of other monomers or solvents", while the rule states "These operations use thermoset resins and/or gel coats that contain styrene and/or methyl methacrylate to produce plastic composites." The commenters point out that, as written, a hypothetical resin containing methyl methacrylate and no styrene would be affected.

Commenter IV-D-73 also makes the following specific recommendations:

1. Clarify the scope of the rule by changing the sentence in section 63.5785 to read as follows: The only operations affected by this subpart are those that use thermoset resins and/or gel coats that contain styrene to produce plastic composites.

2. Change the title of the NESHAP to more accurately describe the scope of the rule. Potential titles include: "Plastic Composites (Styrene-Based) Production NESHAP" or "Thermoset Styrene Plastic Manufacturing NESHAP." The phrase "reinforced plastic composites" would need to be replaced with "plastic composites" throughout the rule.

3. In the "Regulated Entities" table, change the word "HAP" in both examples of regulated entities to "styrene."

Response: The commenters are correct. The intent of the rule is to cover only those operations that use thermoset resins and/or gel coats that contain styrene. The rule is not intended to cover resins that contain only methyl methacrylate. We have modified the language in §63.5785 of the rule to reflect this. However, we do not believe it is necessary to change the title of the rule or to replace the term "reinforced plastic composites" with "plastic composites" in the rule. The definitions found in the rule are sufficient to make it clear what is or is not covered by the rule.

Lastly, we changed the Regulated Entities table to use the word "styrene" instead of "HAP".

3.2 Filler Putty

Comment: One commenter (IV-D-111) points out that they use a special styrene-based filler putty around the fittings on its tanks. The areas with putty are then laminated over with resin and glass. The putty contains methyl ethyl ketone, which is used as a catalyst when applied. The commenter states that the rule does not appear to address the use of this type of putty material and requests that EPA include guidance on how the use of putty will be treated under the final rule.

Response: The filler putty referred to by the commenter is a production resin that is highly filled. As such, the referenced filler putty is just one type of filled resin. Therefore, under the final rule, such filler putty is being treated as a filled resin.

3.3 Other Methods of Estimating Emissions

Comment: Several commenters (IV-D-35; IV-D-22; IV-D-43; IV-D-98) request that sources be allowed to use emission factors in approved Title V permits to estimate emissions. Commenter IV-D-22 states that they have conducted testing to determine emission factors unique to each of its processes as they are implemented in their plants and that these factors form the basis of the facilities' Title V operating permits. According to Commenter IV-D-98, the use of such factors will reduce the administrative burden for sources and regulators and will likely improve the emission estimates. Commenter IV-D-35 states that these factors have been evaluated by local air agencies and incorporated into permits and suggests that Section 63.5798 "Determining Facility Emissions" should be clarified by stating that emission factors in Title V permits may also be used to determine emissions. Commenter IV-D-22 suggests that such factors also be allowed to be used for comparison against applicable MACT thresholds. Finally, Commenter IV-D-43 states that emission factors that are approved for Title V permitting should also be approved for emission reporting.

Response: We agree with this comment and believe that paragraphs 63.5798(a)(1) and (2) already allow for the use of facility-specific emission factors. Paragraph 63.5798(a)(1) states, in part, that "you may use any HAP emission factor approved by us such as factors from the Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (AP-42)." Paragraph 63.5798(a)(1) was not intended to limit HAP emission factors only to the AP-42. Paragraph (a)(2) allows the development of facility-specific emission factors through performance testing. If a facility has facility-specific factors that have been approved for use in Title V operating permits, then those factors can be used to determine whether or not the facility is a major source under Section 112 of the Clean Air Act. In addition, a facility can use facility-specific factors for comparison against HAP emission limits. We have modified the language in §63.5798 to clarify the use of such facility-specific factors and have added the provision that such factors must be supported by test data.

Comment: Numerous commenters (IV-D-2; IV-D-3; IV-D-4; IV-D-5; IV-D-83; IV-D-84; IV-D-85; IV-D-87; IV-D-88; IV-D-89; IV-D-91; IV-D-92; IV-D-99; IV-D-100; IV-D-102; IV-D-104; IV-D-106; IV-D-113; IV-D-115) requested that CFA's Unified Emission Factors be specifically allowed for estimating emissions. The International Cast Polymer Association participated in the development of these factors and they are used by industry for TRI reporting and obtaining permits. According to the commenters, use of these factors for MACT will reduce the paper work burden for small manufacturers.

Response: We have reviewed the CFA's Unified Emission Factors and the basis for their development. Based on this review, we believe that the CFA's Unified Emission Factors are acceptable for estimating emissions for the purposes of this rule (i.e., to determine whether a source is a major source and, if so, to compare against any applicable threshold values). The final rule incorporates the specific Unified Emission Factors that can be used for these purposes.

Comment: One commenter (IV-D-65) requests that EPA add compliance options that allow new and existing pultruders to use facility specific emission factors derived from empirical stack testing to calculate emissions and demonstrate compliance with the standards. The commenter has emission factors derived from empirical stack testing that have been incorporated into Title V permits. With this method, a company or inspector can simply multiply the emission factor by the styrene processed to calculate emissions and determine compliance. These emission factors take into account the percentage of styrene delivered to the pultruder and the curing efficiency.

The comments states that any combination of control technologies that achieves the 95% capture and control requirement should be permitted by EPA as long as it can be demonstrated through the use of emission factors. The commenter noted that their process is 98.14% efficient, thus better than the 95% capture and control requirement. The commenter stated that through stack testing they had obtained an emission factor of 1.86% for pre-form injection. This emission factor represents the percentage of styrene from the neat resin delivered to the pultruder that is emitted to the atmosphere and is also representative of the curing efficiency of the pultrusion process with respect to styrene. In other words, for pre-form injection, 1.86% of the styrene is not cured as part of the reinforced plastic composites (RPC) ladder rail and is emitted to the atmosphere, while the remaining 98.14% is chemically cured in the RPC ladder rail and becomes a non-volatile component of the material. The reason for this low emission factor is primarily due to the inherent design of the commenter's proprietary process and its P2 initiatives. These P2 initiatives consist of: (1) using low monomer resins, (2) minimizing the dimensions of exposed wet areas in the process, (3) minimizing air flow over wet areas, (4) using HVAC to control temperatures to minimize monomer vapors, (5) using conservation vents on resins storage tanks, (6) converting pultrusion machines from open bath to pre-form injection, (7) utilizing covered resin containers and mixing drums, and (8) increasing the focus on general housekeeping in the operations.

Response: As stated previously in another response, facility-specific factors developed from source testing can be used to determine a facility's emissions for purposes of determining if the facility is a major source and for comparing against any applicable threshold level. The final rule makes this provision clearer than was provided in the proposed rule.

With regards to the second part of the comment, the commenter appears to have confused the efficiency of a process with the requirement for 95 percent capture and control. The 95 percent capture and control requirement applies to emissions resulting from a process, regardless of the conversion efficiency of that process. A more efficient process will have lower emissions and a lower emission factor, but if the emissions are sufficiently high to exceed any applicable threshold, then the facility will still be required to meet the 95 percent capture and control requirement. As in the proposed rule, the final rule provides an alternative to the 95 percent capture and control requirement that is in terms of an emission factor. If a facility's process is sufficiently efficient and low emitting, it may comply with the alternative emission factor instead of the 95 percent capture and control requirement. For these reasons, we have not changed the final rule with regard to this second part of the comment.

3.4 Relationship Between Boat MACT and RPC MACT

Comment: Several commenters (IV-D-12; IV-D-50; IV-D-111) request clarification in the reinforced plastics composite rule as to which operations at a reinforced plastics composites facility and which operations at a boat building facility will be covered by Subpart WWWW and which will be covered by Subpart VVVV.

Commenter IV-D-12 states that neither the preamble nor the proposed rule explicitly states whether the proposed rule applies to manufacturing of boats or boat components and requested that language be added to the final rule clarifying that Subpart WWWW doe not apply to any processes or operations subject to Subpart VVVV – National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing.

Commenter IV-D-50 states that, except for a different SIC code, the production of open molded composite boat parts is indistinguishable from reinforced plastic composites parts and assumed that a boat plant will have to meet the composite plastics requirements, but the proposed rule does not explain how this will be done. On the other hand, the commenter notes, some composites plants produce parts used to build boats. A prime example are parts for personal water craft. The commenter assumes that production of these parts would be subject to the boat MACT rule, but noted the rule is not clear. The commenter, therefore, asks EPA to clearly resolve this in the final rule. Specifically, the commenter states, EPA should state whether the boat MACT or the composite MACT applies to boat parts, such as the PWC parts.

Commenter IV-D-111 requests that EPA indicate in the rule whether the boat MACT or the composites MACT applies to boat parts, such as those produced at Proform's barge deck cover operation of one of their facilities. This commenter points out that boat building plants routinely produce non-boat parts, such as railcar hatches, casket liners, truck hoods, custom car bodies, satellite TV dishes, and various custom architectural parts and presumes that such facilities will be required to meet the composites rule when producing composite parts that are not associated with the manufacture of boats. However, the methods and procedures for achieving and demonstrating compliance are not specifically mentioned in the composites MACT rule. The commenter also points out that some composite plants produce boat parts that are then used to build boats, such as the barge covers built at one of the commenter's facilities. Logically, according to the commenter, such a facility will be required to meet the provisions of the final Boat MACT when producing barge covers that are related to the manufacture of river barges. However, the methods and procedures for demonstrating compliance when producing boat parts at a composite plant are not specifically addressed in the composite MACT rule.

Response: We have added §63.5787 to specifically address this issue. A facility must produce boat hulls and decks, or molds for boat hulls and decks to be covered by the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV). If it produces reinforced plastic composites, as defined in this final rule, and is not covered by the Boat Manufacturing NESHAP, then it is covered by this rule, regardless of the final use of the parts. We believe this approach makes it very clear when a facility is covered by which rule.

In the case where a facility is subject to the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV), but the facility also makes parts that are not a component of their boats, then the non-boat parts are covered by this final rule. However, only resins and gel coats actually used to make parts covered by this rule are considered in determining compliance. In addition, in order to simplify compliance, we are allowing facilities that are subject to the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV), and that also make parts subject to this rule, to elect to make all their production operations subject to the Boat manufacturing NESHAP if they can demonstrate, through the appropriate HAP emissions calculations, that this will not result in any HAP emissions increases over what would occur if they complied with this rule for non-boat part production.

3.5 Emissions from Boat Building Activities

Comment: Two commenters (IV-D-111; IV-D-50) requested that EPA indicate whether or not the HAP emissions from boat building activities will be added to the HAP emissions from non-boat composites activities for determining when the above-the-floor requirement is triggered.

Response: We have clarified in the final rule that HAP emissions from activities covered by the Boat Manufacturing NESHAP are not considered when calculating HAP emissions thresholds to determine the applicability of add-on controls.

3.6 Rolling 12-month Average

Comment: One commenter (IV-D-111) requests that the time frame under the rule be the calendar year rather than a 12-month rolling average. According to the commenter, the 12-month rolling average is "problematic" due to seasonal and marketplace fluctuations. The rolling 12-month average could involve a number of months with high production at the beginning, lower production in the middle, and higher production at the end. This could prompt the commenter to trigger above-the-floor MACT because they do not control demand in the marketplace during any rolling 12-month period. It would be more predictable and easier for the commenter if the MACT calculation was based on a calendar year so they could better gauge their production cycles. The rolling 12-month time frame creates a moving target, even though it is an average, in avoiding exceedance of the 100 ton above-the-floor MACT threshold. The commenter can not always predict production during any particular month within the 12-month rolling period, particularly if the 12-month period includes the traditionally higher production months. The calendar year approach would provide more predictability in avoiding an exceedance of the 100-ton threshold.

Response: We believe that the commenter has confused when the 12-month rolling average is used with the calculation of a facility's emissions to determine if the facility is a major source or exceeds an applicable 100 ton per year threshold level. The 12-month rolling average is used to demonstrate compliance with applicable emission limits, not to determine a facility's annual emissions [see paragraph 63.5800(a)]. The calculation of a facility's emissions is based on the 12 months of operation prior to the effective date and this calculation is to be repeated annually [see paragraph 63.5799(a)(1)]. Thus, while it is not necessarily a calendar year (i.e., January 1 through December 31), it does reflect a fixed 12-month period and not a rolling 12-month average. We continue to believe both provisions are appropriate and they are included as proposed in the final rule.

3.7 Effect of Exceeding or Falling Below Thresholds

Comment: One commenter (IV-D-111) requested that the rule explain what happens in instances where the 100 ton per year threshold is exceeded even by a little temporarily to avoid requiring installation of add-on controls.

Response: It is our intent that unusual circumstances not result in a facility having to add and operate add-on controls. We have added clarifying language to the rule that allows a one-time exemption to the 95 percent capture and control requirements for facilities that were below the 100 tpy threshold, and exceed the threshold due to unusual circumstances. This exemption allows facilities to average annual HAP emissions over three years to determine if they exceed the threshold. However, you are also required to document and report the unusual circumstances that caused the exceedance, and why you expect to remain below the threshold in the future.

If you exceed the threshold in the next year, then the exemption is withdrawn and you must comply with the 95 percent capture and control requirements within 3 years from when you originally exceeded the threshold. The reason for this provision is to avoid the situation where a facility apply for the exemption simply to gain an additional year to comply.

Comment: One commenter (IV-D-73) states that to encourage pollution prevention, a provision should be added so that facilities that do not use add-on controls in their composites operations will no longer be subject to this NESHAP if they become area sources in the future. The "once in, always in" policy has been explained in an EPA memorandum. The commenter believes this policy will discourage future pollution prevention research and implementations. The commenter agrees that the policy is valid for sources using add-on control, but disagrees that it is appropriate for facilities that reduce emissions through pollution prevention measures. According to the commenter, facility owners and state agencies agree that this policy should be changed and that STAPPA/ALAPCO addressed this issue in a letter to EPA in 1998. The military also requested a change in a letter in 1999.

Prior to NESHAP compliance date, this policy is an incentive for facilities to reduce emissions, but that incentive ends as soon as the compliance date passes. Thirty-five of the 433 facilities in EPA's database use less than 50 tons per year of regulated materials and 79 use less than 100 tons per year. Many of these facilities will become subject to the NESHAP and will remain subject even if they subsequently reduce their emissions by switching operations to low or no HAP resins and/or switch to low-emitting processes. The commenter recommends adding the following provision to section 63.5785: "You are no longer subject to this subpart if your facility becomes an area source after the compliance date as long as your area source status does not rely on reductions achieved from add-on emission control devices on your plastic composite production operations."

Response: We continue to believe that the once-in-always-in policy appropriately applies to sources that become subject to the requirements of this NESHAP by the compliance date. See Potential to Emit for MACT Standards - Guidance on Timing Issues at 9 (May 16, 1995). As EPA has explained: "facilities that are major sources for HAPs on the 'first compliance date' are required to comply permanently with the MACT standard to ensure that maximum achievable reductions in toxic emissions are achieved and maintained. EPA believes that this once in, always in policy follows most naturally from the language and structure of the statute. In many cases, application of MACT will reduce a major emitter's emissions to levels substantially below the major thresholds. Without a once in, always in policy, these facilities could 'backslide' from MACT control levels by obtaining potential-to-emit limits, escaping applicability of the MACT standard, and increasing emissions to the major-source threshold (10/25 tons per year). Thus, the maximum achievable emissions reductions that Congress mandated for major sources would not be achieved." Id. For this reason, we decline to adopt the suggested provision.

Because the compliance date is three years after the effective date of the rule, sources have three years in which they can incorporate pollution prevention control techniques and reduce emission below major source thresholds, thus avoiding the requirements of this rule.

3.8 Identification of Existing Facilities

Comment: One commenter (IV-D-52) requests that, to counter misleading information from vendors, the following point needs to be clarified: Facilities in operation or under construction with proper permits prior to August 2, 2001 are existing facilities.

Response: We agree that the facilities identified by the commenter are considered existing facilities. However, we believe that the rule in combination with the General Provisions are sufficiently clear and therefore have not modified the final rule based on this comment.

3.9 Multiple Application Systems

Comment: One commenter (IV-D-14) asks if the point value system is applicable to multi-application method facilities and states that the proposed rule should either (1) more clearly state how to deal with the multi-application of systems within a single facility or (2) explicitly state that multi-application facilities are exempt from the individual application method floors.

Response: We agree with both points made by the commenter and have clarified in the final rule how multi-application systems are to comply. The final rule clarifies which HAP emission factor is to be used when a facility uses multi-application systems and what HAP emission limits should be used as floor values.

3.10 Repair Operations

Comment: Two commenters (IV-D-10; IV-D-73) request clarification of several issues related to repair work and submitted a letter summarizing the discussion and requesting clarification if there are any misunderstandings.

Commenter IV-D-10 requests confirmation of the following points:

1. The proposed rule is intended to cover manufacturing operations only. Repair processes conducted in a manufacturing facility are also covered because they are likely to use the materials.

2. If the processes conducted are re-manufacturing, refurbishment, repair, or maintenance, it

will be considered repair for this NESHAP. The exception would be if the repair is a part which frequently needs replacement and is made in an assembly-line type process.

3. The commenter expressed concern that local enforcement agencies could interpret the proposed regulation as applicable to the type of repair processes they conduct. At EPA's request, the commenter will develop recommended language to add to the NESHAP for clarity. The commenter asked if the possibility still exists under section 63.5930 that local regulators could change it to their own intent.

4. Since there is no de-minimis level, if any manufacturing is done, it will be covered.

5. At some of the commenter's facilities, some minor manufacturing may occur. The repair work that may also be done at the same facility is not related to the manufacturing processes (and would be using different resin and reinforcing materials.) The commenter believes that as the rule is currently written, both the manufacturing and repair operations would be covered. The commenter does not believe that is EPA's intent and asked if they should develop language to correct that.

Commenter IV-D-73 states that definitions of repair and manufacturing should be added to clarify the types of repair and manufacturing covered by the rule. The preamble and rule should be consistent in stating that the facilities that only repair composites are not affected. The commenter agrees with EPA that repair only facilities should not be covered but also feels that repair operations co-located with unrelated manufacturing operations should not be covered either. Some large DoD facilities will have repair operations at the same "major source" as manufacturing operations, but the repair operations are completely unrelated and use very different materials. The commenter also believes additional clarification is needed to define re-manufacturing as repair. For example, helicopter rotor blades are re-manufactured using the same core with the composites outer shell rebuilt around the core. This commenter made the following recommendations:

1. Revise the last two sentences of section 63.5785, Am I subject to this subpart? to read as follows:

> Plastic composites production also includes repair, cleaning, mixing, and material storage associated with the manufacture of plastic composites. Repair of previously manufactured plastics composites unrelated to manufacturing conducted at a facility is not covered by this subpart.

2. Add the following definition:

> Repair means the application of a thermoset resin or gel coat to a previously manufactured reinforced plastic composites components or parts. Repair includes non-routine production of individual components or parts intended to repair a larger item. Manufacture means the routine production of finished reinforced plastic composites products intended for commerce. For the purposes of this rule, manufacture does not include research and development activities, proto-type development, or repair operations.

3. Delete the "and/or repair" in both of the examples in the "Affected Source" table in the preamble, since facilities that only repair are not affected. The text should read " ... facilities that manufacture intermediate or final products using styrene containing thermoset resins and gel coats."

Response: The rule has been clarified to make explicit what repair operations are and are not covered by this rulemaking. The clarifications are in-line with the comments. Specifically, facilities at which only repair occurs are not covered by this rule. In addition, repair of previously manufactured reinforced plastic composite unrelated to the reinforced plastic composites manufactured at the facility are also not covered by this rule. Repair processes on parts that are manufactured at the same location are covered by this rule.

3.11 Exemptions

3.11.1 Source categories already covered by another MACT

Comment: One commenter (IV-D-57) states that almost all of their manufacturing operations are regulated by the Aerospace NESHAP. According to the commenter, during development of that rule, EPA analyzed potential sources of HAP emissions from Aerospace manufacturing and work activities and regulated those sources for which MACT controls would have a measurable impact and decided not to establish control requirements for many small-scale activities from which emissions were minimal. The commenter, therefore, requests that EPA exempt those source categories for which a MACT rule has already been promulgated from coverage under the reinforced plastics composite rule.

Response: The Aerospace NESHAP (40 CFR part 63 subpart GG) covers operations such as cleaning, paint removal, and surface coating. It does not specifically cover, or exempt, operations where reinforced plastic composites are produced. The fact that these operations are conducted at facilities that are subject to another NESHAP is not sufficient reason to exempt them from regulation. In addition, there are facilities in the Reinforced Plastic Composites source category that will be covered both by this NESHAP, and the NESHAP for Plastic Parts Production, which covers application of coatings to plastic parts. Based on this, we are not exempting Reinforced Plastic Composites production operations at aerospace manufacturing facilities from these NESHAP.

3.11.2 Low usage

Comment: Several commenters (IV-D-57; IV-D-73; IV-D-41; IV-D-63; IV-D-56) request a low usage exemption be incorporated into the rule.

Commenter IV-D-57 states that low-volume usage activities incidental to manufacturing operations, such as model making, should not be regulated. According to this commenter, the imposition of work practice standards and record keeping and reporting requirements for these small-scale activities creates an undue burden with minimal environmental benefit. The commenter requests that EPA exempt incidental uses of styrene-containing resins and/or gel coats. This commenter states that the RPC rule should not apply to the use of low-volume resins and/or gel coats for which the annual total of each separate formulation used at the facility does not exceed 100 gallons and the combined annual total of all such resins and gel coats does not exceed 250 gallons.

Commenter IV-D-73 states that the standard should include a low-use exemption to prevent insignificant manufacturing operations from being affected. Plastic composites manufacturing at DoD facilities are usually part of larger repair operations. Manufacturing occurs on a non-routine basis when an old component can not be refurbished and when it is not economically feasible for a civilian manufacturer to produce the product. The resin used for DoD operations is limited in quantity and varied in type. Several coating NESHAP exempt facilities using a maximum of 200 to 1200 gallons per year. The EPA could create a comparable exemption for RPC operations. Facilities that qualify for the exemption would only need to track material purchased and/or usage and would not be considered an affected source. The commenter recommends adding the following exemption in Section 63.5785 and definition in section 63.5935:

> The owner or operator of a plastic composites manufacturing operation that meets the criteria for an incidental plastic composites manufacturing operation shall maintain purchase or usage records to demonstrate that they meet the criteria but shall not be subject to any other provisions of this subpart and the operation is not considered an affected source.

> Incidental plastic composites manufacturing operation means a facility that uses no more than 10 tons per year of styrene-based resins, fillers, gel coats, sheet molding compounds, and bulk molding compounds in the manufacture of plastic composite products or components.

Commenter IV-D-41 states that they operate aircraft production facilities subject to a number of NESHAP but primarily regulated by the Aerospace Manufacturing and rework NESHAP. Some facilities are involved in incidental activities associated with manufacturing aircraft, such as model building and R&D. Most large aerospace manufacturers perform similar model building in support of normal business activities. The commenter uses less than 100 gallons/month of styrene or MMA-containing resins or gel coats on such operations. Subjecting these incidental operations to MACT standards provides minimal environmental benefit at great cost. Other NESHAP provide low-usage. The Aerospace NESHAP includes a 50 gal/yr exemption for separate coating formulations and the Wood Furniture NESHAP exempts incidental furniture manufacturers using less than 100 gallons per month. The commenter requests the addition of the following to definitions to Section 63.5935:

> "An *incidental reinforced plastic composite manufacturer* means a major source that is primarily engaged in the manufacture of products other than reinforced plastic composites, and that uses no more than 100 gallons per month of thermoset resins or gel coats that contain styrene and/or methyl methacrylate in the production of reinforced plastic composites."

The commenter also suggests that the following statement be added to Section 63.5785:

> "An incidental reinforced plastic composite manufacturer shall maintain purchase or usage records demonstrating the demonstrating the facility meets the criteria specified in section 63.5935 of this subpart, but the facility is not otherwise covered by this subpart. Parts of facilities involved in research and development activities are not covered by this subpart."

Commenter IV-D-63 states that they primarily produce aerospace components and is subject to the aerospace NESHAP but occasionally has limited scale production of non-aerospace items (as described in the following paragraph). The commenter requests a low volume exemption of 2,000 gallons per year. An annual limit is preferable to a monthly limit because a large part could require 500-600 gallons to produce, but only a few unit would be produced in a year. The figure was derived from the facility's past records showing maximum resin usage of 1800 gallons in a year.

The commenter's facility constructs bus bodies and ship structures using a vacuum-assisted resin transfer molding process, in which resin is injected into a mold and a vacuum at the outlet of the mold was routed to a drum containing 200 pounds of activated carbon prior to its emissions to the open atmosphere. Emissions testing of this process in 1994 showed that 99.55% of the styrene in the resin is consumed in curing. With only 0.45% of the total styrene entering the carbon absorber, emissions of styrene were negligible.

Commenter IV-D-56 states that they are listed under the SIC code for "Space Research and Technology" because it's operations are not "production" capacity. Minimal amounts of resins and/or gel coats may be used. The commenter suggests refining the definition of "affected facility" to clarify the applicability and/or establishing a de-minimis material usage or emission limit applicability.

Response: A major source is defined as a source that has the potential to emit, considering controls, 10 tpy of any one HAP, or 25 tpy of any mixture of HAP, from the contiguous facility. Based on this definition, a reinforced plastic composites manufacturing operation that, by itself, emits well below the levels of HAP that define a major source, may be considered major because it is collocated with other HAP emitting operations. We have established no emissions level for HAP that is considered to be de minimis, and not subject to regulation.

However, we agree that the sources subject to these NESHAP should be limited to the types of facilities where we have data. The smallest source, based on resin and gel coat use, in our data base uses 1.2 tpy of resin and gel coat combined. Therefore, we believe that, in the absence of any available data, facilities that use less than 1.2 tpy of resin and gel coat to produce reinforced plastic composite products or components should be exempt from this rule, and have added a low-use cutoff exemption of 1.2 tpy of combined resin and gel coat use to the rule.

3.11.3 R&D facilities

Comment: Many commenters (IV-D-98; IV-D-57; IV-D-65; IV-D-73; IV-D-41; IV-D-34; IV-D-11; IV-D-56; IV-D-25) request that the rule incorporate an exemption for research and development facilities. Many of these commenters point out that many other rules have a similar exemption, while one states that the lack of such an exemption is inconsistent with most other NESHAP. Commenter IV-D-65 states that due to the unique nature of each experimental run, controls would severely restrict the ability to develop new techniques and that EPA has provided similar R&D exemptions in other standards (e.g., 40 CFR 63.742). Three commenters refer to the Clean Air Act directing EPA to regulate R&D facilities as their own separate source category. Commenter IV-

D-34 notes that they do not have manufacturing facilities subject to the rule but do supply raw materials and conducts R&D on the supplied products to test new formulations and resulting plastics and states that it would be inappropriate to regulate R&D facilities, and R&D operations at major source facilities, in the same manner as manufacturing operations due to the variable nature of R&D operations and emissions. Similarly, Commenter IV-D-11, who is not involved in the "production" of RPC production, but has R&D projects that could be subject to the rule, states that they believe the analysis for the standard was based on large-scale industrial operations and therefore the cost estimates and technical evaluations underlying the control standards in the proposed NESHAP would not have considered the costs and technical feasibility of applying those same standards to R&D operations, which are by nature intermittent and operated on a "batch" scale. Commenter IV-D-25 states that R&D pultrusion operations should be exempt from MACT requirements; otherwise, a great deal of time and money may be needed for compliance with experimental processes that produce very few emissions and that may never become commercial operations. Finally, Commenter IV-D-57 stated that it is unreasonable to burden R&D activities, which may use very small quantities of styrene materials, by mandating emission limits, operating limits, and work practice standards, that it is economically burdensome and unreasonable to mandate emission controls for such small-scale and widely varying activities, and that imposing regulatory requirements on these operations could adversely impact research efforts without providing a measurable benefit to the protection of public health and the environment.

Several commenters offered definitions of R&D operations or facilities.

Response: We have added language in the final rule to exempt R&D facilities and R&D operations. The definition of R&D is the same as contained in Section 112(c)(7) of the CAA.

3.11.4 Handheld aerosol cans

Comment: One commenter (IV-D-73) requests an exemption for materials contained in handheld aerosol cans.

Response: Based on communications with the commenter, there does not appear to be any handheld aerosol cans that would be used in the RPC industry that contain material covered by the RPC rule. Therefore, this comment is not relevant and we have not incorporated a handheld aerosol can exemption in the final rule.

3.11.5 Mold sealing and release agents, mold stripping and cleaning solvents as defined in §63.5779 of subpart VVVV, solvents used for cured resin or gel coat from application equipment

Comment: One commenter (IV-D-73) states that several exemptions are noted in the preamble along with explanations such as no regulation of solvents used for cleaning cured resin from application equipment and no regulation of mold sealing and release agents and mold stripping and cleaning solvents, but that the rule itself does not address these exemptions. The commenter, therefore, requested EPA to add a list of exemptions in section 63.5785 similar to, but broader than, the exemptions listed in section 63.5683 of the Boat Manufacturing NESHAP to the effect that this subpart does not apply to mold sealing and release agents, and mold stripping and cleaning solvents as these terms are defined in 63.5779 of subpart VVVV, and solvents used for cleaning cured resin or gel coat from application equipment.

Response: We agree that the preamble and proposed rule were inconsistent. The exemptions noted in the proposal preamble should have been included in the rule language. Therefore, we have incorporated the exemptions identified in the proposal preamble into the final rule.

3.11.6 Personal use

Comment: One commenter (IV-D-73) states that the rule as proposed will inappropriately regulate personal use of composite materials by residents on military installations. According to the commenter, it is not unreasonable to assume that "composite manufacturing operations" may take place on military establishments as a result of resident's hobbies such as construction of a kit plane, making a surfboard, or repairing a wide variety of personal items including cars. It would be inappropriate to penalize military members and their families for pursuing activities allowed by other persons not residing on military bases. The commenter, therefore, recommends adding to the list of exclusions noted in a previous comment "personal activities that occur in military housing areas or hobby shops."

Response: We agree with the commenter that personal use should not be covered by the rule.

We have included an exemption for personal activities unrelated to manufacturing operations.

3.11.7 Patching, bonding, and repair material

Comment: Two commenters (IV-D-98; IV-D-94) state that the reinforced plastics composite source category should include patching, bonding, and repair materials and their use should have no control requirements. Commenter IV-D-98 notes that these materials are typically highly filled and do not contain large amounts of HAP and typically only small amounts of these materials are used. Commenter IV-D-94 notes that they use HAP containing patching bonding and repair "bondo" to repair parts, flaws, seams, and defects in product surfaces and that relatively small quantities of these materials are used, generally in sanding and finishing areas. According to this commenter, the emissions would be very minimal, since most of these materials are highly filled and there are no known controls for the use of these materials. Finally, Commenter IV-D-94 states that EPA expects this process to be included in the Composites MACT and not in the Plastic Parts Coating MACT and asked for confirmation of this to avoid confusion between the standards.

Response: We did not establish control requirements for any of these types of materials unless they are resins or gel coats. In order to avoid confusion as to what rule covers these materials, we have included them as part of the source category, but have exempted them from any control requirements with one exception. If any of these materials is actually a filled resin or gel coat, that resin or gel coat should meet the same HAP content limits as if it were used in regular production operations.

3.11.8 Prepreg and non-gel coats

Comment: One commenter (IV-D-73) states that the rule should be clear that prepreg materials and "non-gel coat" surface coatings are not regulated. According to the commenter, the current definition of reinforced plastics composites production may cause styrene-containing thermoset prepreg and plastics composites coating materials to be regulated. The commenter states that prepreg are reinforced materials coated with partially cured resins and therefore it can be argued that they are substrates that are coated when they are used. The commenter notes that the emissions per pound are much lower than those of equivalent fully uncured resin, so the point value system does not accurately reflect emissions from prepreg. The commenter, therefore, recommends the following:

1. Prepreg materials should be defined and specifically excluded from the regulation. A suggested definition for prepreg is the following: "Prepreg material means reinforcing material impregnated with partially cured resin prior to the molding process and cured by the application of energy."

2. The rule should clarify that surface coatings that are composed of thermoset plastic composite materials and are not gel coats are not covered by this regulation. The applicable surface coating NESHAP source category would instead cover these coatings.

Response: Prepreg materials and surface coatings that are not gel coats are not intended to be covered by this rule. Therefore, we have included language in the final rule in §63.5790 to clarify that prepreg materials, and non-gel coat surface coatings are not subject to this rule.

3.11.9 Conductive gel coats

Comment: One commenter (IV-D-131) requests that the category of Conductive Gel Coats be considered a specialty gel coat, exempt from HAP limits. The commenter states that the reinforced plastics composites industry and themselves do not have a low HAP conductive gel coat. The commenter points out that the conductive gel coats are applied in mold coating and later post painted with the electrostatic process and that any additions of extenders to the gel coat can cause reduction in conductivity of the fabricated parts. The loss of conductivity causes more emissions when the part is painted due to the poor transfer efficiency of the paint migrating towards the finished RPC part. Finally, the commenter noted that in 1999 they manufactured approximately 125,000 lbs of conductive gel coat containing approximately 50,000 pounds of styrene, which represents less than 0.4% of all styrene used by the commenter.

Response: The proposed rule would require that conductive gel coat meet a standard of 30 percent HAP if they are white or off/white, and 37 percent HAP if they are any other color. We do recognize that there are specific gel coats where sources have established that a higher HAP content is necessary to satisfy essential performance characteristics. However, this commenter has not met that burden. We also note that based on the comment, the HAP content of the gel coat as currently formulated is 40 percent. This number is very close to the 37 percent HAP limit (assuming the gel coat is not white or off/white). We believe that it is reasonable to assume, due to the low usage figures provided by the commenter, that facilities could continue to use this gel coat where necessary and achieve compliance through averaging.

3.11.10 National Emergencies

Comment: One commenter (IV-D-73) requests that during national emergencies, facilities that are subject to average annual emission limits in Table 3 be allowed to continue to comply with Table 3 even if their emissions exceed the 100/250 tpy thresholds if their increased production is in support of a Federal action. The commenter has several operations that normally operate at low production rates, but the production rates could increase greatly in times of war or increased national defense. According to the commenter, the requirement for facilities that subsequently increase emissions above thresholds to install controls is appropriate for facilities that will continue to exceed the threshold on an ongoing basis, but not for intermittent production increases due to an emergency. The commenter, therefore, recommends adding the following:

1. Add the following provision in new section 635800(d): “Notwithstanding 63.5800(b) and (c), if subsequent increases are due to a temporary increase in production required to support a Federal agency response to an emergency, the facilities may continue to comply with Table 3 of this subpart.”

2. Add the following definition to section 63.5935: “Emergency means a situation where non-routine action on the part of the Federal agencies involved is needed, such as natural disasters like hurricanes or earthquakes, civil disturbances such as terrorist acts, and military mobilizations.”

Response: We have added language to the rule that allows a one-time exceedance of the 100 tpy threshold above which some facilities will have to install add-on controls. We believe this provides sufficient flexibility for facilities to increase production due to national emergencies without triggering the requirement for add-on controls.

3.12 Small Versus Large Businesses

3.12.1 Definition of small business

Comment: Three commenters (IV-D-75; IV-D-50; IV-D-51) stated that either the term "small business" was not adequately defined, or that EPA's small business definition is not suitable for characterizing the commenter as a large business. Commenters suggested that EPA define small business in the rule and reevaluate that definition in terms what determines if a business is large or small.

Response: The final rule no longer distinguishes between "small" and "large" businesses. Therefore, we do not need to define "small" business in this rule or reevaluate our definition of small business..

Comment: Numerous commenters (IV-D-36; IV-D-37; IV-D-39; IV-D-80; IV-D-24; IV-D-111; IV-D-81) objected to the different thresholds for the above-the-floor capture and control requirements for large and small business. Most of the commenters believe that the different thresholds created an unfair advantage to small business, and requested that the threshold be raised to 250 tpy for any size business.

Response: For most existing facilities, this issue is no longer relevant as the above-the-floor requirement has been removed in the final rule. The final rule still contains a threshold level for facilities in the centrifugal casting and in the continuous lamination/continuous casting process groupings. We looked at the facilities in both of these process groupings and the level of their emissions. Based on the best available information, each of the facilities in these two process groupings would be required to meet the same standard whether we set a common threshold of 100 tons per year for small and large businesses or whether we retained the 100/250 threshold distinction for large and small business respectively. The original reason for setting different thresholds was due to concerns and comments for facilities in the open molding portion of the industry. After considering these facts, we set a common threshold for both large and small businesses of 100 tpy to determine when the above-the-floor requirements apply. Because the final rule does not distinguish between small and large businesses, these comments are now moot.

3.12.2 Appropriateness of distinction

Comment: One commenter (IV-D-81) disagrees with EPA's approach of using different thresholds for add-on control for small versus large businesses. The commenter notes that the proposed rule includes all employees under like ownership to determine the business size classification. The commenter believes business size classifications should be eliminated entirely. However, if they remain, the commenter recommends that business size determinations be based on only those facilities that are under like ownership and that are required to comply with the proposed NESHAP.

Response: As previously discussed, the final rule no longer distinguishes between small and large businesses. Therefore, this comment is moot.

Comment: One commenter (IV-D-72) claims that EPA may not set different standards for small and large businesses based on the size of the business rather than the size of the source. The commenter states that the Clean Air Act clearly identifies "major source" by the level of emissions. Therefore, according to the commenter, MACT floors must depend on the average emission reductions by the best sources without regard to cost factors of business size. The commenter notes that EPA made the determination apparently solely on the advice of the Small Business Administration and that the proposed rule includes different requirements based on EPA's assertion of economic impact rather than environmental impact. In setting above-the-floor controls, EPA is required to take costs and non-air quality health and environmental impacts into consideration. EPA has assumed that large businesses have greater access to capital to install controls but has not supported that position.

Another commenter (IV-D-15) states that the proposed standard is inconsistent with the Clean Air Act because it implicitly establishes s category of sources based on small business status. The commenter states that the Clean Air Act provides that "The Administrator may distinguish among classes, types and sizes of sources in establishing such standards ..." According to the commenter, size clearly refers to the facility or affected source and not the entity that owns or operates the source. The commenter maintains that there is no basis for establishment of different standards for sources of equal capacity having equal potential to emit. NESHAP are specifically required to be based on technology. Furthermore, even if legal, the commenter claims that separate standards would be unwarranted because a large multinational company may own one or more small plants, while a smaller company may operate a single, much larger plant. The commenter further adds that a profitable small business with little debt may be in a better position to finance control equipment than a larger, less profitable entity. The commenter, therefore, urges EPA to re-analyze MACT without regard to the number of employees of the parent company of any individual facility and to promulgate uniform standards for plants of a given throughput or potential to emit.

Another commenter (IV-D-71) claims that the distinction between small and large businesses for establishing different "above-the-floor" thresholds is legally dubious. The commenter notes that a 95% capture and control requirement makes no sense regardless of how many workers are employed. Another commenter (IV-D-50) asserts that two different "above-the-floor" threshold levels are fundamentally unfair and inappropriate under the Clean Air Act.

Another commenter (IV-D-81) refers to section 101(b) of the 1990 Clean Air Act Amendments and notes that paragraph (b)(1) states the first purpose of the law is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." By allowing a higher threshold for 80% of the industry (i.e., a 150 tpy higher threshold for small businesses), the commenter believes that EPA is essentially conceding that the higher level of emissions meets the first purpose of the Act. Or does the EPA intend to suggest that the adverse environmental and human health impacts of a particular pollutant are somehow related to the number of personnel employed by an affected source? Therefore, the commenter urges EPA to incorporate a single above-the-floor threshold of 250 tons per year for all affected sources regardless of business size.

Response: We still believe the use of different thresholds in the proposed rule was appropriate because this distinction only applied to the above-the-floor regulatory option. The CAA specifically states that when we go above the floor, we must consider costs. It does not mandate how costs must be considered, or preclude us from subcategorizing by the size of the business. However, because the final rule no longer distinguishes between small and large businesses, these comments are moot.

Comment: One commenter (IV-D-107) notes that EPA requested comments pertaining to "The higher threshold for small businesses is based on concerns that it is more difficult for small businesses to raise the necessary capital to purchase add-on controls to comply with the 95 percent control level." The commenter believes the assumption is correct and the elevated threshold of 250 tpy should be applied to small businesses. According to the commenter, the risk profile to a lending institution is greater for a small business than a large business, and small businesses would have a very difficult time obtaining a loan for a large capital expenditure supporting a non-value added asset such as capture and control equipment.

Response: We thank the commenter for their input. On the basis of the revised cost analysis and the resulting elimination of the above-the-floor requirement, only two process groupings are potentially affected by an above-the-floor threshold. Considering the facilities in these two process groupings as to whether they are large or small businesses and what requirements they would have to meet based on their emissions, we have found it unnecessary to create a distinction between small and large businesses. Therefore, we no longer find it necessary to create an elevated threshold for small businesses.

3.12.3 Threshold for existing and new sources

Comment: One commenter (IV-D-107) states that the small business threshold of 250 tpy should apply to both existing and new sources. New capital funding to build a new facility would require due diligence on the part of the lending institution. The new facility would have to generate enough cash flow to meet the added debt load. Adding a capture and control system to the debt load would significantly reduce the cash flow available to pay back the lender's note on a new facility because the capture and control system is a non-value added asset. The lending institution would discern this and deny the loan. The real issue is centered on determining the threshold at which a small business incurs incremental costs that are significantly deleterious to the company's cash flow such that access to capital is restricted and/or eliminated, and company growth truncated. The impacts have much greater significance at 100 tpy than at 250 tpy. A more reasonable alternative consistent with the assumptions for small business would be a 250 tpy threshold applicable to both current and new small businesses.

Response: For new sources, however, the proposed (and final standard) is the MACT floor, not an above-the-floor option. We do not have the flexibility to create small and large business distinctions when the standard is set at the MACT floor. Therefore, the final rule for new sources does not incorporate a small and large business distinction.

4.0 DEFINITIONS

4.1 Low Smoke/Low Flame Resins

Comment: Four commenters (IV-D-54; IV-D-79; IV-D-98; IV-D-23) request that the rule revise the definition for low smoke/low flame resins. Commenter IV-D-54 suggests that EPA redefine low smoke/low flame resins utilizing the standard industry testing for three common applications, because the current definition uses the term Class 1 which is only used in some building codes and is not inclusive of all the types of low smoke/low flame resins utilized for building protection.

Commenters IV-D-54, IV-D-98, and IV-D-23 suggested the following definitions:

A resin is considered to be a low flame spread/low smoke resin if it is being used in an application that requires it to meet one of the following requirements:

1. Interior or exterior building applications that require:
   – ASTM E-84 Flame Spread Index # 25 and Smoke Developed Index # 450
   – or pass NFPA 286 Room Corner Burn Test with no flash over and total smoke released not exceeding 1,000 m^2
2. Mass transit applications that require:
   – ASTM E-162 Flame Spread Index # 35
   – ASTM E662 Smoke Density $Ds_{@\ 1.5\ min}$ # 100 and $Ds_{@\ 4\ min}$ #200.
3. Duct Applications that require:
   – ASTM E-84 Flame Spread Index # 25 and Smoke Developed Index # 50 on the interior and exterior of the duct.

Commenter IV-D-79 requests that any proposed definition for low flame spread/low smoke applications should include resins with a HAP content of at least 40%. The commenter, who is a resin supplier and manufactures several specific resins that have gone through extensive testing for conformance to ASTM E84 Class 1 ratings, notes that these resins have been tested and approved for many applications at significant cost that would make replacement with alternative resins prohibitively expensive.

Response: We agree with the commenters. The definition in the final rule for low flame spread/low smoke resin has been changed to incorporate their suggestions.

4.2 Composite Tooling

Comment: One commenter (IV-D-73) states that the meaning of "composite tooling" in 40 CFR 63.741(f) needs to be clarified, and distinguished from any possible overlap with the requirements for cleaning and gel coating of equipment (such as molds) in the RPC NESHAP, if styrene-based resins are used in Aerospace applications.

Response: The rule has been clarified to ensure there is no overlap. Also, it was determined that the confusion was due to a definition in the proposed rule that "tooling" meant mold production. We have removed this definition as it was not needed. We still define what is meant by tooling resins and tooling gel coats.

4.3 Neat Resin

Comment: One commenter (IV-D-73) states that the definition of "neat resin plus" in section 63.5935 would be more accurate if it were revised as follows: "*Neat resin plus* means ~~neat~~ resin plus any organic HAP-containing materials that are added to the resin ...".

Response: The intent of the proposed definition was to define the term "neat resin plus" and not "neat resin." Thus, we believe it is appropriate to use the term "neat resin" in this definition. However, the proposed rule did not define "neat resin." Therefore, in the final rule, we have added a definition of "neat resin" and have kept the definition of "neat resin plus."

4.4 Mechanical Atomization Application

Comment: Four commenters (IV-D-98; IV-D-29; IV-D-19; IV-D-16) are concerned over the definition of non-atomized mechanical application. Three of the commenters (IV-D-29; IV-D-19; IV-D-16) are concerned over the use of the term "fluid impingement technology" (FIT) in the definition because of the close association of that term with a particular manufacturer. Two commenters (IV-D-29; IV-D-19) are concerned that the public and others might view this as an endorsement for the specific model and brand. These commenters recommended that a more generic term, encompassing additional products, be used in the definition. Commenter IV-D-16 states that it is "premature" to include fluid impingement technology in the MACT at this time.

Commenter IV-D-98 suggests the following definition:

> "Mechanical non-atomized application means the use of a device for applying resin or gel coat that (a) has been provided by the device manufacturer with documentation showing that use of the device results in HAP emissions that are no greater than the emissions predicted by the applicable non-atomized application equation(s) in Table 1 to Subpart WWWW of Part 63; and (b) is operated according to the manufacturer's directions, including instructions to prevent the operation of the device at excessive spray pressures."

Commenter IV-D-29 suggests replacing the term "fluid impingement technology" with examples of non-atomized mechanical applications such as pressure fed rollers, flow coaters, and spray guns equipped with specially designed nozzles classified as non-atomized.

Commenter IV-D-19 suggests replacing the term "Fluid Impingement Technology spray guns" with "Impingement Dispense Nozzles." This commenter states that the latter term is more generic, encompassing additional products, such as the commenter's non-atomizing nozzle that utilizes a single orifice/directed column design.

<u>Response</u>: We agree with the suggestion to revise the definition for "mechanical nonatomized application" and have incorporated a new definition based on the commenters' suggestions.

4.5 White/Off-White Versus Other Pigmented Gel Coats

<u>Comment</u>: Two commenters (IV-D-77; IV-D-98) recommend that EPA define white/off-white gel coats and pigmented gel coats. Commenter IV-D-77 states that this is necessary because the HAP limit for white/off-white gel coats is different from the HAP limit for pigmented gel coats and

without a definition, the rule is vague and ambiguous and likely to result in regulatory uncertainty. Commenter IV-D-98 suggests that all gel coats with 10% (by weight) or more TiO_2 be considered as "white/off white" gel coats, and all gel coats with less than 10% TiO_2 as "pigmented."

Response: We agree that a definition is required in order to avoid ambiguity and regulatory uncertainty. Therefore, we have incorporated the commenter's proposed definition for white/off-white gel coats in the final rule.

5.0 COMPLIANCE

5.1 Point Values and Point Value Equations

5.1.1 New products and equipment

Comment: One commenter (IV-D-54) states that a means to establish percent reduction and point values is needed to foster the development of new products and equipment to serve the affected industry. Ashland recommends EPA establish a protocol to allow the smooth introduction of equipment, products, and other technologies into Subpart WWWW. If EPA should shift the rule to utilize the UEF factors from CFA, there should still be an independent method for approaching EPA with a unique technology that can be incorporated into the rule via newly created point values. This protocol should likely allow the company who created the new technology to conduct the necessary testing through an independent lab such as CMTI to model a new point value equation.

Another commenter (IV-D-71) requests that EPA include a provision in the final rule that will establish procedures to incorporate future P2 technologies into the point value scheme. A procedure for creating new point value equations should be carefully detailed in the final rule.

Commenter IV-D-71 also notes that the proposed point value scheme only recognizes lower monomer contents and a few application technologies as valid emission reduction techniques. The commenter states that EPA should find a method for crediting the more qualitative P2 techniques in the point value scheme. This may be a challenge but it is important because successful P2 usually results from small incremental changes and innovations, such as better process controls, reduced over spray waste, and better training for the workers.

Another commenter (IV-D-73) states that non-styrene resins used as a result of a pollution prevention effort should be allowed to be included in the point value compliance calculation. This would encourage pollution prevention from both small and large facilities. Consider a facility using a low-styrene resin and a high styrene resin at approximately the same rates on the same operation. If the facility switches the low-styrene resin to a HAP-free resin, the point value would increase because the HAP-free resin would not be regulated and thus would not be part of the point value calculation. To encourage pollution prevention, consider adding the following:

Revise section 63.5895(c) as follows: "You must collect and keep records of resin and gel coat use, HAP content, pollution prevention efforts to lower HAP emissions, and operation where the resin is used if you are meeting emissions limitations based on a point value."

Add the following to the end of section 63.5900(c): "Styrene-free resins and gel coats may be included in the point value calculation if their use is the result of a pollution prevention effort."

Another commenter (IV-D-75) states that the proposed rule allows a weighted average MACT point value to comply with the emission standards. The rule needs to specify that new zero VOC and zero HAP resins and gel coats can be used to comply with the point value equations and averaging compliance methods. The rule should be flexible enough to accommodate new products and technologies.

Response: The commenters are basically requesting that the final rule (1) allow the use of non-styrene resins and gel coats to be included in the calculation of compliance with the point values and (2) provide procedures for incorporating new technologies into the point value equations. In short, we disagree with the first request and agree with the second request.

We do not believe that it would be appropriate to allow the use of non-styrene containing resins and gel coats to be included in the calculation of compliance. The MACT floors were developed only considering resins and gel coats that contain styrene (and other organic HAP, such as MMA) used at the facilities in our database. We did not consider non-styrene resins and gel coats used at our database facilities. In addition, if we had considered non-styrene resins and gel coats, it is likely that we would have been required to consider facilities producing similar products where the facility was using only non-styrene containing resins and gel coats. Given the basis for developing the standards, it is inconsistent to allow non-styrene containing resins and gel coats to be used in the compliance calculations. Therefore, we have not added this request to the final rule.

On the other hand, new technologies may be developed that allow the same resins and gel coats to be applied more efficiently, thereby reducing the level of emissions. We agree that the rule should be flexible to allow the use of such equivalent or lower emitting technologies. Allowing facilities to use site-specific HAP emissions factors, and the procedure in the General Provisions to 40 CFR part 63 that allows facilities to demonstrate equivalent HAP emissions reductions, adequately address the incorporation of new HAP emissions reduction technologies. However, we have added §63.5798 to the final rule that discusses how to obtain approval for new technologies.

5.1.2 Unified emission factors

Comment: One commenter (IV-D-71) recommends replacing the point value system with CFA's unified emission table. The table is simple, straightforward, and easy to use and understand. The South Carolina Department of Health and Environmental Control uses the table for monthly emission reporting purposes. Access to the table can be accomplished quickly through the CFA website and serves as a ready reference for both manufacturer and regulator.

Another commenter (IV-D-94) states that, if the UEF Model replaces the EPA MACT Model for establishing point values then the EPA Model HAP assumptions should be incorporated into the point value equations. This commenter favors replacing the EPA MACT Model with the UEF Model in establishing point value equations. This would help streamline the process of qualifying new technologies such as non-atomized gel coat application. However, the EPA database that was used to establish the floors did not differentiate between types of HAP, i.e., styrene and methyl methacrylate. The EPA model and resulting point values that set the floors assumed that all HAP materials reported in the database were emitted at the same rate as styrene. On the other hand, the UEF Model does differentiate between styrene and methyl methacrylate, and assigns a higher emission rate for methyl methacrylate. It would be unfair to set the floors using the assumption that all HAP are the same, and require compliance based on a higher rate for methyl methacrylate. In fact some of the floor setting facilities may not be able to meet the floor point values. Since methyl methacrylate is used in some gel coat products to enhance UV and water resistance, and improve other weatherability characteristics in the final product, the reasonable thing would be to establish a higher point value for products requiring these properties. However, it is unlikely that this data exists in the database. Therefore, this commenter recommends a simple and reasonable approach to this problem if the EPA wishes to establish point values using the UEF model equations. The commenter's recommendation is to follow the original EPA assumption that all HAP are emitted at the rate of styrene. The UEF based floors and compliance point values would then agree with the database and compare with the EPA Model assumptions.

Another commenter (IV-D-71) states that the CFA's Unified Emission Factors are more accurate and have more extensive P2 applications than the current point value equations. Further, the UEF program could provide a workable method for incorporating future P2 improvements into the MACT rule. Aqua Glass would support a switch to the UEF equations in the final rule with the condition that only the styrene UEF equations should be used to compute PV values and the methyl methacrylate equations should not be used. The commenter pointed out that the EPA did not consider MMA monomer separately from styrene monomer during development of the rule, but instead lumped MMA content into the styrene content and called all of this styrene content "HAP." The lumped approach was based on EPA's precedent regarding different monomer species in the Wood Finishing MACT rule. The EPA PV equations were based on only styrene emissions data and the proposed MACT floors were based on only "styrene" contents. Therefore, the use of MMA equations would be particularly unfair because EPA did not use them to evaluate proposed floors.

Another commenter (IV-D-98) states that EPA's MACT model equations for open molding should be replaced with CFA's Unified Emission Factors. Use of UEF should not result in less stringent requirements but will have several benefits. The UEF have been compared to stack tests and have proven to be very accurate. CFA will regularly update the UEF for new technologies and supports an emission test protocol and carefully managed testing facility at Purdue. Almost all open molding operations use the UEF for TRI reporting, state permits, emission inventories, etc. Use of UEF for MACT will significantly reduce the administrative burden of the rule. If the MACT model equations are used in the final rule, an equation should be included for non-atomized application of gel coat and the rule should include some provision or guidance for future revisions to account for new technologies.

<u>Response</u>: We reviewed the UEF and the basis for their development. Based on this review, we believe that these equations are acceptable for estimating both HAP emissions factors for compliance purposes, and HAP emissions.

As a result, in this final rule we have changed the HAP emissions factor equations in Table 1 to subpart WWWW of part 63 to be identical to their equivalent UEF equations. Therefore, facilities will have one set of identical factors for both compliance and HAP emissions estimation purposes.

Because of this change, it was necessary to recalculate the floor values by recalculating HAP emissions factors using the new HAP emissions factor equations for the facilities in our database and re-ranking the facilities based on the new calculations. Therefore, both the numerical values of the floors (lb/ton) and the equations used to calculate compliance changed. Note the floors themselves did not change significantly because when we re-ranked facilities using the new HAP emissions factors, the ranking order did not change with two exceptions. In those cases, the new equations caused two facilities to switch places and changed the floor slightly. However, these changes were minor compared to the changes that resulted from other comments we received and additional data we gathered.

In addition, we have added to the rule equations for the nonatomized gel coat application and for the mechanical atomized controlled spraying of resins. We have incorporated the latter UEF equation in the final rule so that it is applicable only where the controlled spray is achieved through automated or robotic, not manual, spraying.

Finally, we are incorporating only the UEF equations developed for styrene and not those developed for MMA. We are doing this because the data analysis forming the basis of the standards assumed all organic HAP to be styrene. This is a reasonable assumption as the amount of MMA used is a very small percentage of the total HAP monomer used.

5.1.3 <u>Nonatomization</u>

<u>Comment</u>: One commenter (IV-D-103) encourages EPA to acknowledge and incorporate the benefits of nonatomization with the point value equations.

Another commenter (IV-D-71) notes that EPA described point value equations for determining MACT floor and demonstrating compliance, but the rule does not contain all of the major open molding processes and does not include some of the newer P2 application technologies. The commenter specifically requested that two new PV equations be adopted - one for non-atomization application of resins and one for non-atomization application of gel coats. The proposed rule assumes that non-atomized application is identical to manual application. This assumption would over-predict emissions from non-atomized applications and therefore under predict the benefits of these techniques. This commenter offers the following point value equation for non-atomized resin application and asks that it be included in the final rule:

Point Value (pound per ton) Non-atomized resin application = 0.5656 x $[\%\text{styrne}]^{1.3797}$

Commenter IV-D-71 states that the data points used to derive the PV equation are found in the April 4, 1999 UEF Technical Discussion document and that these same data points were used to derive the linear CFA UEF equation for the non-atomized application of resin.

Similarly, Commenter IV-D-71 offers the following equation for non-atomized application of gel coat:

Point Value (pound per ton) Non-atomized gel coat application = 0.7398 x $[\%\text{styrne}]^{1.5838}$

Commenter IV-D-71 states that the data points used to derive this power PV equation are found in the July 17, 2001, EECS report entitled "Emission Factors for Non-atomized Application of Gel Coats used in the Open Molding of Composites" and that these same data points were used to derive the linear CFA UEF equation for the non-atomized application of gel coats.

Response: As noted in the response to the previous comment, we have incorporated the UEF equations for styrene in the final rule, including those for non-atomization application of resins and gel coats. However, the equations offered by Commenter IV-D-71 are different from the CFA UEF equations for the non-atomization application of resins and gel coats. We do not believe that substituting a different equation based on a power function solely for nonatomized application is appropriate, or results in a more accurate estimate of emissions. Therefore, we have not incorporated the equations suggested by the commenter.

5.1.4 Mechanical nonatomization

Comment: One commenter (IV-D-52) believes there is a problem with the point value equation for mechanical non-atomized application. The commenter prepared an Excel worksheet to compare the emissions using Unified Emission Factors and using the EPA Point Value Method. Ten of the 12 facilities that show a difference of 20% or greater use mechanical non-atomized application.

Response: We are no longer using the point value equations. Thus, this comment is moot.

5.1.5 Manual application of gel coats

Comment: One commenter (IV-D-98) notes that the proposed rule does not provide for manual application of gel coats. Many gel coats are applied manually as exterior coatings when the major component part is made. The rule should require that for emissions calculations from manual application, gel coat should be considered as a resin with the stated HAP content and the appropriate Point Value equation should be used. Companies where manual gel coat application is less than 2% of the total gel coat usage should be exempt from maintaining records of manual application.

Response: We agree with the commenter that the proposed rule did not provide an equation to estimate HAP emissions from the manual application of gel coats and that the rule needs to address this. In the final rule, we have addressed this issue by allowing two options. First, the facility may elect to simply include manually-applied gel coat with spray gel coat application for compliance and HAP emissions estimation purposes. Alternatively, they can elect to treat the gel coat as spray for compliance purposes, but use the manual resin application HAP emissions factor to estimate HAP emissions.

We believe the changes discussed above are sufficient to simplify reporting and recordkeeping for manual gel coat application. Therefore, we have not added an exemption for maintaining records for manual gel coat application.

5.1.6 Alternative point values (Table 5)

Comment: One commenter (IV-D-58) notes that the alternative point values in table 5 do not provide a realistic alternative to 95% capture and control. In an example calculation for 35% styrene resin in open molding, the point value calculation is equivalent to 96% control – more stringent than the add-on control requirement.

Response: While the values may not appear realistic for some facilities, Table 5 to subpart WWWW of part 63 does present the opportunity to meet the final standards using alternative means. We believe that the values in Table 5 to subpart WWWW of part 63 provide incentive to continue to pursue lower-HAP resins and gel coats and other pollution-prevention opportunities and that even if only one facility can use the values, then their inclusion is worthwhile. For these reasons, we have retained Table 5 to subpart WWWW of part 63. However, we have made minor modifications to this table. For process/product groupings where there is an operating facility that currently meets the 95 percent control requirement, we changed the value in Table 5 to subpart WWWW of part 63 to reflect the highest actual calculated HAP emissions factors for operating facilities.

5.1.7 Weighted averages

Comment: One commenter (IV-D-98) states that the weighted average point values should be calculated as a weighted average of resin used. The commenter points out that the equation in the current proposal gives equal weight to each month instead of each quantity of resin or gel coat processed.

Another commenter (IV-D-13) asked for clarification that the “weighted average floor” calculated using equations 2, 3, and 4 is substituting the “floor” for the Point Values, as CFA has done with the Point Value Calculator. The EPA representative confirmed that this is the case.

Response: We agree with the commenter that 12-month rolling average point values should be calculated using a weighted average based on the amount of resins, rather than using an average based on monthly values, as was proposed. Therefore, the final rule incorporates the commenters’ suggestion. Also, we have changed the terminology for the averaging calculations. We now use the term “emissions factor” when discussing values calculated using actual resin and gel coat HAP contents, and “emissions limit” when discussing average values calculated from the required floor limits. This change should clarify how to calculate the weighted average floor.

5.1.8 Use of same resin option

Comment: One commenter (IV-D-13) requests clarification on the option to use the same resin across different operations. The EPA representative explained that the “floor” for a particular resin is fixed, but the “point value” can vary with different application methods. The commenter requested that clarification of this point be added to the rule to avoid confusion by state regulators.

Response: Where a facility is using multiple application techniques, the rule allows the owner or operator to use the same resin across the different techniques. The owner or operator determines the highest allowable resin HAP content for all their operations. They are then allowed to use resins with organic HAP contents equal to or less than the highest allowable in all their operations. We believe that this option provides facilities the necessary flexibility to be in compliance for all their operations, without the necessity to substitute different resins for each operations, where previously they used the same resin (or resin mix) for each operation. This compliance option is described in §63.5810 paragraph (c)

In the proposed rule we stated that facilities that use the compliance option in §63.5810 paragraph (c) could also average across all open molding and all centrifugal casting operations, as specified in §63.5810 paragraph (b). However, one commenter pointed out that the procedure to average was unclear. After considering this comment, we believe it is not necessary to allow facilities to use the same resin across different operations, and also allow averaging across all open molding and all centrifugal casting operations. We also could not determine a practical procedure.

Therefore, in this final rule, we have changed the compliance procedure. If a facility elects to use the compliance option where they use the same resin for all operations as described in §63.5810 paragraph (c), then all resins used under that option are excluded from any averaging across open molding operations and centrifugal casting operation using the procedures in §63.5810 paragraph (b). Facilities may still elect to use a combination of compliance options at the same time.

Also, you can include multiple resins under the §63.5810 paragraph (c) option, and use the weighted average HAP content of all the resins, as long as that weighted average is less than or equal to the maximum allowable organic HAP content in Table 7 to subpart WWWW for each operation considered separately.

5.2 Vapor Suppressants

Comment: One commenter (IV-D-54) suggests that EPA include language regarding CFA vapor suppressant test method in order to allow the suppressed point values to be utilized. According to the commenter, this test is critical to portions of the industry that will use vapor suppressants to comply with MACT while meeting customer demands. Since EPA included VSR in the point value equations, it is apparent that the agency has recognized the strong need.

Another commenter (IV-D-98) noted that many composites manufacturers using open molding will want to use vapor suppressants to reduce emissions and meet the required maximum point values. The proposed rule, however, does not contain or reference a test method that would allow sources or suppliers to test suppressed resin systems and determine an effectiveness factor. The rule should contain or reference CFA's Vapor Suppressant Effectiveness (VSE) Test. The commenter is currently working with EPA to address data quality issues and will send a revision in the coming months.

Response: We agree with the commenter that the rule should incorporate a test method applicable to vapor suppressants, which are effective at reducing HAP emissions for many resin applications. The effectiveness of vapor suppressants varies depending on the resin and the application technique used. Thus, a single effectiveness value can not be assigned. The final rule, therefore, incorporates a test method to determine the effectiveness of vapor suppressants for facility-specific applications. This test method is being published as Appendix A to 40 CFR part 63, subpart WWWW.

5.3 Control Devices

5.3.1 Preconcentrator Performance

Comment: One commenter (IV-D-71) states that the proposed rule is vague or silent on key issues including continuous monitoring of the preconcentrator control performance. The commenter states that the question of the practical long-term efficiency of the preconcentrator system is particularly disturbing because the proposed rule is silent on the issue of compliance assurance. Unfortunately, compliance assurance will present three problems - (1) no available parametric measure will work to monitor absorber efficiency, (2) continuous or semi-continuous FID is the only and practical alternative, but is unreliable, and (3) automated FID equipment is very expensive and prone to periods of malfunction.

The commenter also states that the only feasible available CEM system that can measure styrene is an automated sampling device based on Method 25A equivalent FID sensor that has an annual cost of $78,200 per year. The additional cost of this necessary compliance monitoring equipment was not included in the EPA cost analysis.

Response: We have reviewed the information on those facilities using add-on control devices with carbon adsorbers within the reinforced plastic composites industry and have found none that are using the FIDs. These facilities are able to demonstrate compliance with 95 percent reduction. Therefore, we do not believe it is necessary to require FIDs under this rule and have not included the cost of such devices in our cost analysis.

5.3.2 Combustion temperature

Comment: One commenter (IV-D-76) states that the proposal requires that the average combustion temperature be determined during the compliance test and from that time forward the average combustion temperature must be maintained at or above the temperature achieved during the test. The commenter believes that EPA intended the average temperature during the performance testing to apply during production and suggests clarifying the language as follows: "...maintain ***during production*** the average temperature at or above the ***average*** temperature achieved during the performance test".

Another commenter (IV-D-39) notes that even with sophisticated systems, thermal oxidizer temperatures fluctuate over time. The proposed rule as currently worded would require facilities to burn additional natural gas during normal operations to ensure that the average emission temperature during tests is consistently maintained during the five years between tests. The commenter proposes adding the following conditions: "The average combustion temperature for any 3-hour period of operation shall not be more than 50°F below the average temperature during the most recent emission test that demonstrated the emission unit was in compliance."

Response: We have modified the final rule language in §63.5895 to state that the requirements to keep and record data only apply during periods of production. However, we have not incorporated any allowance for temperature fluctuations below the average temperature. The continuous compliance requirements of subpart SS state that temperature deviations only need be reported if the daily average falls below the average recorded during testing. We believe this is sufficient to allow for normal incinerator temperature fluctuations.

5.3.3 THC measurement

Comment: One commenter (IV-D-76) notes that the proposal states "For compliance determinations, the EPA will assume that all THC measured with EPA Method 25A are HAP" (FR 40336, Section III, 4.,K). To avoid misinterpretation, the commenter suggests adding "*(except methane and ethane)*" after THC in the sentence.

Response: Method 25A cannot differentiate between different organic compounds. Therefore, if you use Method 25A to determine compliance, you must assume that all organic compounds measured are organic HAP.

5.3.4 Subpart SS

Comment: One commenter (IV-D-75) notes that many of the requirements for control devices are in Subpart SS and not Subpart WWWW. The requirements in Subpart SS are not clear. The commenter specifically refers to the averaging time for the requirement to monitor the temperature of a control device and the exact method of determining compliance with the percent reduction requirement, stating that they are not clearly stated. The commenter believes that these requirements may be confusing to small companies affected by the rule and permitting agencies incorporating the requirements into permits. The commenter, therefore, urges EPA to either complete the revisions to Subpart SS proposed December 6, 2000, or clarify the intent and requirements within Subpart WWWW.

Response: We proposed performance specifications for CPMS to ensure that such systems are installed, calibrated, and operated in a manner that would yield accurate and reliable information regarding the performance of closed vent systems and control devices. Subpart SS currently states that "all monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately." Therefore, owners and operators are already required by subpart SS to follow written performance specifications, but not necessarily the ones that we proposed in the amendments.

We have decided not to finalize the proposed revisions to subpart SS because we are currently developing performance specifications for CPMS to be followed by owners and operators of all sources subject to standards under 40 CFR part 63.

Because owners and operators subject to subpart SS are currently required to follow specifications for CPMS, even though they may not be as specific as those we proposed, we have decided to wait for the rulemaking that will propose performance specifications for all of 40 CFR 63. We believe it would be premature to promulgate performance specifications when the performance specifications that would ultimately be promulgated for all of 40 CFR part 63 may be significantly different as a result of possible public comments received in that rulemaking.

5.4 Automated Controlled Spraying

Comment: Two commenters (IV-D-59; IV-d-128) request that EPA recognize automated or robotic controlled spraying as an allowed pollution prevention technique. Commenter IV-D-59 noted that a similar provision was provided in the Wood Furniture MACT, and that EPA accept controlled spraying emission factors developed by CFA. The commenters recognize EPA's concern with controlled spraying as a manual application technique and the perceived inability to enforce its use by operators. According to the commenters, these are not factors because their controlled spray applications are fully automated. Commenter IV-D-59 points out that all elements of controlled spray operations (which are described in the previous CFA submittals) are in place at their facility. Commenter IV-D-128 notes that their robotic systems have resulted in a large reduction in over spray and an increase in transfer efficiency.

Response: We agree that the commenter's process in which the commenter uses an automated controlled spray system should be allowed to use unified emission factors developed by the CFA for "controlled spray." Thus, the final rule includes an emission factors equation for automated/robotic spray applications based on the unified emission factor for controlled spraying. However, the final rule does not allow manual controlled spray to use the same emission factors.

Comment: One commenter (IV-D-59) urges the EPA to continue to seek pollution prevention alternatives, especially as it relates to the above-the-floor option for large existing sources. The commenter states that they use a low-emitting process recognized by the state permitting authority in a 112(g) MACT determination and incorporated into the Title V permit. In this process, low HAP resins and gel coats are used and a wood reinforcing panel is laid down immediately after roll-out, thus eliminating further cure emissions. The state agency recognized this as a means of vapor suppression. Vacuum bagging/bonding is applied last as the most effective way to seal the wood panel into the fiber-reinforced resin layer.

The commenter's process also uses controlled spraying through the use of automated reciprocators. Controlled spraying has been demonstrated to be a bona fide reduction technique but has not received credit in the proposed MACT standard due to EPA's concerns that it will unable to enforce its use by operators.

According to the commenter, their process emits 50% less than a comparable source using only low-HAP raw materials, but the commenter remains subject to the above-the-floor option because they are already emitting over the 100 tpy threshold. The commenter states that they receive no credit under the proposed rule for their low-emitting process and requests that EPA find a way to credit pollution prevention in this standard consistent with the overall agency commitment to pollution prevention.

Response: As noted in the previous response, we have allowed "credit" in the final rule for automated/robotic spray. However, we are still concerned about the enforceability and efficacy of manual controlled spray and the final rule, as at proposal, does not give credit for manual controlled spray.

5.5 General

5.5.1 HAP content determination

Comment: One commenter (IV-D-98) notes that the requirements for sources to determine the HAP contents should be the same as those in the Boat MACT. The commenter points out that the boat rule allows sources to use information from the supplier or manufacturer and requires the use of the upper limit of a range if a range is provided and allows use of supplier information as long as a measured value does not exceed the provided value by more than two percentage points. The commenter notes that suppliers provide many of the same resins and gel coats to boat manufacturers and composites manufacturers.

Response: We agree with the commenter and revisions to the rule have been made in line with the HAP content determination provisions found in the Boat MACT, which in part allow up to a plus or minus 2 percent allowance. The final rule does not incorporate a test method for determining the HAP content because we have no test requirements for resins and gel coats.

5.5.2 12-month rolling average

Comment: One commenter (IV-D-78) believes that EPA's proposal of showing compliance on a 12-month rolling average basis is reasonable, consistent with many state and local requirements, and provides a balance between operating flexibility and enforceability of MACT in conjunction with Title V permits. More frequent tracking could be unreasonable and burdensome.

Response: We thank the commenter and the final rule continues to use this basis.

5.5.3 Overall facility vs. each process/product grouping

Comment: One commenter (IV-D-52) understands that the overall facility and not each process or product must be in compliance. Therefore, a facility can have one or more operation or product above an emission limit as long as the 30 day and/or 12 month average is below the emissions limit. This point should be clarified.

Response: The commenter is correct in their understanding, but we believe the wording in the proposed rule is sufficiently clear on this point and have not changed the wording in the final rule.

5.5.4 Available methods to comply

Comment: One commenter (IV-D-52) states that, to counter misleading information from vendors, it is necessary to clarify that existing and new facilities with a potential to emit of less than 100/250 tpy are not required to install add-on controls. They can comply by using one or more of the following methods:

a. Reduce styrene or HAP content of the resins and/or gel coats, for all or part of their materials

b. Use vapor suppressed resins for all or part of their materials

c. Change the method of application for all of part of their current operations

d. Change method of curing, switch to covered or bag curing for all of part of the items produced

e. Install add-on control for all or part of their processes.

Response: Under the final rule, most existing facilities will not have to make a threshold determination. However, a few existing facilities and new facilities will have to make threshold determinations. For those facilities emitting less than the threshold level of 100 tons per year (the final rule no longer has a 250 ton per year threshold), several techniques can be used to achieve compliance, as correctly pointed out by the commenter. However, we believe that the proposed rule was sufficiently clear with one exception. The option listed in item (e) above cannot be used to reduce facility emissions below the 100 tpy threshold to avoid the 95 percent capture and control requirement. We have added language in §63.5799 of the final rule to make this clear.

5.5.5 Change of compliance option

Comment: One commenter (IV-D-98) states that the rule should allow composites manufacturers to change compliance options and should provide guidance on notification and record keeping requirements if affected sources need to switch compliance options.

Response: We agree with the commenter and have added language to the final rule making it clear that changes in the selected compliance option are allowed.

6.0 MACT ANALYSIS - GENERAL

6.1 Supported Items

Comment: One commenter (IV-D-54) expressed support for the following elements of the MACT:

1. Exemption of HAP-containing solvents to clean application equipment.

2. Optional compliance methods for open molding.

3. Use of vapor suppressants in the point value equations.

4. Reliance on the supplier MSDSs for HAP content and no requirement for testing by the industry.

A second commenter (IV-D-98) added that the following provisions of the proposed rule are important to industry and should remain in the final rule:

1. Reconstruction should not trigger new source requirements
2. Averaging starts 12 months after compliance date
3. Different HAP contents for different end-use applications
4. Same resin used for all parts of a product
5. Averaging for open molding

Response: We thank the commenters for their support of these provisions. They have been retained in the final rule.

6.2 Use of Information

Comment: One commenter (IV-D-59) states that EPA should have reviewed CFA's economic studies and responded to them prior to proposing the MACT standard, noting that CFA gathered and presented, at a significant cost, all of the data EPA is now requesting. According to the commenter, EPA inexplicably indicated to CFA that the information would not be considered immediately and indicated that the information had not been given more than a cursory review. The commenter then states that EPA's disregard for the data was arbitrary and capricious.

Another commenter (IV-D-71) notes that EPA solicited over two dozen specific comments from industry in the preamble document to the proposed rule and that most of these requests were for basic plant information. The commenter is very concerned that the rule was proposed without adequate factual data. The commenter included a great deal of plant specific data and hopes that EPA will use the data to correct problems in the proposed rule.

Response: We appreciate all efforts on the part of industry to provide information and comments during the development of the proposed standard. However, it is not possible, and sometimes not appropriate, to incorporate every piece of information and address all comments prior to proposing a standard because we would engage in an endless analysis. We believe that we made good faith efforts to evaluate as much information as possible and still propose a rule that not only met a statutory schedule but incorporated most of the major pieces of information and comments. In addition, there is no legal requirement that all comments or concerns be addressed prior to proposal of a NESHAP. Therefore, deferring our consideration of certain information until after proposal was appropriate.

We have now considered all of the information and comments provided by industry and conducted an extensive re-analysis of costs. The final rule is based on data provided by industry and their comments.

6.3 Relationship to the Clean Air Act

6.3.1 Use of emissions data vs. permit limitations

Comment: One commenter (IV-D-74) claims that EPA's reliance on emissions data rather than permit limitations when setting the MACT floors for RPC composites industry violates the Clean Air Act. The commenter quotes the Clean Air Act, stating that, under the Act, for categories or subcategories with at least 30 sources, "[e]mission standards promulgated under this subsection for existing sources ... shall be not less stringent than ... the average emission limitation achieved by the best performing 12 percent of the existing sources ..." 42 U.S.C. § 7412(d)(3)(A). For categories or subcategories with fewer than 30 sources, emission standards must be "not less stringent than ... the average emission limitation achieved by the best performing 5 sources." 42 U.S.C. § 7412(d)(3)(B). Section 302(k) of the Clean Air Act defines "emission limitation" as "a requirement established by the State or the Administrator which limits the quantity, rate, or concentration or emissions of air pollutants." 42 U.S.C. § 7602(k). Thus, according to the commenter, the statutory language requires MACT floors to be based on the average state or federal requirement limiting emissions that is actually achieved by the best performing sources. Therefore, the commenter claims that, to the extent that EPA based the MACT floors on actual emissions data, these floors violate the Clean Air Act.

Response: We do not agree that the term "emission limitation" requires us to use only air permit limitations in setting MACT floors. The D.C. Circuit has consistently held that EPA is to set MACT floors for both new and existing sources that "reflect what the best performing sources actually achieve . . . ." Cement Kiln Recycling Coalition v. EPA, 255 F.3d 855, 861 (D.C. Cir. 2001)(emphasis added); see also National Lime Ass'n v. EPA, 233 F.3d 625, 632 (D.C. Cir. 2001) (method for setting floors must "reasonably estimate the performance of the relevant best performing plants"); Sierra Club v. EPA, 167 F.3d 658, 662 (D.C. Cir. 1999) (approach must "generate a reasonable estimate of the actual performance of the top 12 percent of units.") (emphasis added). See also Comment and Response Summary for Rubber Tire Manufacturing NESHAP at 9-13 (discussing legislative history and case law supporting EPA's interpretation that MACT floors must be based on actual performance of the best performing sources) (Feb. 6, 2002). A MACT floor based solely on permit limits with no regard to actual performance would be in direct conflict with the repeated holdings of the Court.

Thus, for existing sources, we based the MACT floors on the actual HAP content of the resin and gel coats used and the application technique – the most significant factors in the volume of HAP emissions. This approach provided the best approximation of the actual emissions achieved by the best-performing sources in each of the process groups, consistent with Section 112(d)(3) of the Act. Additionally, for most existing facilities, we do not have sufficient data to determine permit limits. For many facilities, permit limits are an emission cap of tons allowable per year. This type of emission limit is not necessarily reflective of the current degree of emissions control at a particular facility.

However, the new source floors of 95 percent control are based on permit limitations. Unlike the emissions caps discussed above, the 95 percent control permit limitation reasonably reflects the level of control achieved in practice by the best performing facilities, while also allowing for a reasonable amount of process variability. We have emission data for the two best performing facilities which show HAP emission reductions of 97.9 and 98.27 percent. However, due to the variability of these processes, we believe that the 95 percent control level in the facility permits more accurately reflects long term performance of these controls, and is a reasonable estimate of the relevant best performing plants.

6.3.2 Legal requirements not met

Comment: One commenter (IV-D-74) notes that in setting proposed MACT floors based on low-HAP products, EPA obtained information on HAP content of gel coats and resins from MSDSs, which report "target" values. The commenter points out that the HAP contents of gel coats and resins vary above and below the target value by approximately 1.5%. For example, the commenter states that the proposed MACT for tooling gel coats was based on a product with a HAP content of 38 percent, as reported in the MSDS for the product, but in reality, because the reported 38 percent HAP content is a target value, the HAP content of this product actually ranges from approximately 36.5 to 39.5 percent.

Therefore, the commenter maintains that, by using the target rather than maximum HAP content, EPA has improperly set the floor at a level that is more stringent than that achieved by the average of the top five sources. According to the commenter, under EPA's proposed standard, a facility that used a tooling gel coat with an actual HAP content of 39 percent would be out of compliance with the standard, even though the HAP content of the product used by the facility was within the range of HAP content of the product upon which the floor was set. In conclusion, the commenter maintains that all of the MACT floors in the proposal that are based on target HAP values are in violation of the Clean Air Act.

Response: We disagree with the commenters conclusion that MACT floors based on target HAP values are " in violation of the Clean Air Act". The commenter is correct in stating that target values from material safety data sheets (MSDS) were used to determine resin and gel coat HAP contents and thus set floors. However, we are also allowing facilities to use the same information to determine compliance with these floors. Therefore, there is no discrepancy between what levels the facilities that set the floors actually achieve, and what they will be required to achieve in the final rule.

We agree that the final rule needs to be revised to account for normal manufacturing tolerances. We have added to these final NESHAP §63.5797, which describes how to determine the organic HAP content of gel coats and resins. This new section states that if the organic HAP content is provided by the material supplier or manufacturer as a range, you must use the upper limit of the range for determining compliance. If a separate measurement of the total organic HAP content, such as an analysis of the material by EPA Method 311 in Appendix A to 40 CFR part 63, exceeds the upper limit of the range of the total organic HAP content provided by the material supplier or manufacturer, then you must use the measured organic HAP content to determine compliance.

If the organic HAP content is provided as a single value, you may use that value to determine compliance. If a separate measurement of the total organic HAP content is made and is less than 2 percentage points higher than the value for total organic HAP content provided by the material supplier or manufacturer, then you still may use the provided value to demonstrate compliance. If the measured total organic HAP content exceeds the provided value by 2 percentage points or more, then you must use the measured organic HAP content to determine compliance.

We believe these added requirements will account for normal manufacturing tolerances. This change also makes this rule consistent with the provisions found in the Boat Manufacturing NESHAP, 40 CFR part 63, subpart VVVV.

Comment: One commenter (IV-D-98) states that the Clean Air Act requires EPA to document and consider the achievability, costs, and environmental benefits of its MACT control proposals and notes that the CAA requires MACT standards for existing sources to reflect the “average emission limitation achieved by the best performing 12 percent of the existing sources ... for which the Administrator has emissions information” subject to certain exclusions. To issue a defensible above-the-floor standard, as EPA has proposed, the agency must determine that the standard is “achievable” after considering “the cost of achieving such emission reduction, ... any non-air quality health and environmental impacts, and energy requirements.” The commenter believes that EPA has not met the legal requirement for such determination to be supported by a factual analysis that takes into account contrary data and arguments and invites public comment on the agency's conclusions.

Response: We disagree with the commenter that the above-the-floor standards found in the proposed rule did not meet the requirements set forth in the Clean Air Act. While there were outstanding issues concerning the costing of the proposed standards, such issues have been fully considered and addressed in the development of the final rule. Also, the outstanding issues were discussed in the preamble of the proposed rule, and the public was given the opportunity to comment on the proposed provisions in the rule, and the information that was presented by industry prior to proposal that was not included in the proposed rule. We believe that the final rule fully meets all requirements of the Clean Air Act in setting MACT standards for those standards that are at the MACT floor and for those standards that are at an above-the-floor level of control, as set forth in greater detail in the proposed rule and Section 6.0 through 20.0 of this document.

6.4 Relationship to E.O. 12866

Comment: One commenter (IV-D-98) notes that Executive Order 12866 provided guidance to regulatory agencies such as EPA to exercise discretion in developing rules and choosing regulatory alternatives and that OMB has notified EPA that the composites MACT rule is "significant" under terms of the executive order. According to the commenter, EPA failed to follow several provisions of the Order, as noted below:

> – EPA failed to choose the alternative that maximizes net benefits, namely pollution prevention, in part because EPA did not do any serious review of the potential environmental, public health and safety, and distributive impacts and equity impacts of its capture-and-control decision. [Section 1(a)]
>
> – EPA's choice of capture-and-control seriously undercuts the process of innovation in pollution prevention. In addition, this choice puts facilities that represent only 13% of the industry's facilities that are not subject to this more stringent provision, raising serious

distributional and equity issues because these facilities do not differ in any material way from those facilities in which they are in competition. [Section 1(b)(5)]

– EPA's proposed capture-and-control provision imposes high incremental costs for small benefits, thus it does not represent a "reasoned determination that the benefits of the intended regulation justify its costs." [Section 1(b)(6)]

– EPA did not use the best available information and in fact ignored studies submitted by CFA long before the draft rule was published. EPA relied on a general economic model instead of verifiable, facility-specific information. [Section 1(b)(7)]

– EPA's decision is in direct conflict with the duties imposed on the industry by OSHA. EPA acknowledged potential conflict but did not analyze the issue. [Section 1(b)(10)]

– A fair analysis of the data shows that the capture-and-control requirement achieves a small increment of HAP reduction compared to pollution prevention while undermining the ability of companies to protect workers and seriously jeopardizing small communities in which many facilities are located. This is inconsistent with the directive to "impose the least burden on society ... consistent with obtaining the regulatory objectives." [Section 1(b)(11)]

A second commenter (IV-D-71) also claimed that EPA improperly avoided the first requirement of Executive Order 12866. The commenter states that this requirement requires EPA to designate a rule as "significant" if the annual impact on the US economy is $100 million or more. The commenter notes that while the proposed rule's preamble states that the annual cost of the proposed rule will be about $30 million, based on studies by CFA, the real cost of add-on controls would be three to 10 times greater – $90 to $300 million. Therefore, the commenter believes that the actual annual impact is probably greater than $100 million, which requires an additional cost impact analysis and detailed review by OMB, which has not reviewed the proposed rule.

Commenter IV-D-71 also claimed that EPA improperly avoided the second requirement of Executive Order 12866, which requires a rule be designated “significant” if it would “create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.” According to the commenter, the type Method 204 enclosures prescribed by the add-on controls would seriously interfere with the workplace regulations established by both federal and state OSHA to protect the plant workers.

Finally, a third commenter (IV-D-72) claims that the proposed rule is not in accordance with the law because it would require entities to violate OSHA requirements. According to the commenter, the proposed 100% capture would increase worker exposure to styrene, and OSHA requires respirators only after determining that work practices and engineering controls are not feasible. The commenter states that engineering controls are favored over respirators because they reduce exposure at the source and that Aqua Glass has successfully used work practices and engineering controls to limit worker exposure to styrene.

Response: All these comments related to the above-the-floor requirement for existing open molding and pultrusion facilities that was in the proposed rule. We have since removed this requirement, which means these comments are now moot.

However, it should be noted that this proposed rule was reviewed by OMB in accordance with the requirements of E.O. 12866. The Office of Management and Budget made several comments concerning the proposed rule and these comments were incorporated in the published version. The provisions of E.O. 12866 do not override the requirements of the Clean Air Act. The CAA states that MACT standards should reflect the maximum achievable control of HAP, considering costs, nonair quality impacts, and energy impacts. We performed an analysis of the costs of the above-the-floor option prior to proposal and found them reasonable. We also analyzed the nonair quality and energy impacts. While it is true that the industry had prepared cost estimates that differed for EPA’s estimates, this difference did not result in the rule being treated as nonsignificant, thus avoiding OMB review.

We also submitted a copy of the proposed rule to OSHA for review and comment. OSHA commented on the proposed rule and those comments were incorporated in the final published version.

OSHA's comments were that the rule should be more stringent. Specifically, facilities that are required to meet the 95 percent control requirement should also have to meet the pollution prevention requirements. We did not revise the rule, but we did offer this as an alternative to the proposed rule and requested comment. No comments were received on the alternative, and we have not included it in this final rule.

In addition, the facilities that currently meet the 95 percent control requirement, also meet the applicable OSHA worker exposure requirements.

6.5 Need to Increase Stringency of MACT

Comment: One commenter (IV-D-76) commends EPA on addressing the potential to reduce VOC emissions while staying focused on reducing HAP emissions, noting that the availability of cost-effective controls for HAP and VOC emissions should be particularly attractive nationally, regionally, and for areas struggling with nonattainment of tropospheric ozone standards. The commenter suggests that the cost-effective VOC reductions resulting from more stringent MACT standards supports increasing the stringency of MACT limits.

This commenter further notes that the proposal states that the RPC industry is diverse, but the proposed requirements appear to be based on the minimum that all similar sources can achieve rather than the maximum that a diverse industry can achieve, despite an economic assessment that some portions of the industry may even profit from the proposed rule. The commenter claims that this approach removes incentive for facilities that can further reduce emissions to do so. The commenter points out that, according to EPA, eighty percent of the affected facilities are small businesses that are allowed to emit more than 250 tons before installing add-on controls. The commenter believes this is contrary to establishing requirements for major sources under the MACT program as a significant number of sources in the industry are not affected by the rule and those that are have several options from which to choose. In that context, the commenter does not understand how 14,500 tons of emissions reduced from more than 22,000 can be maximum control technology. The commenter states that, with the diverse options included for regulatory diversity, greater tracking and accountability within the program is needed and EPA should establish mechanisms to accurately determine the actual quantity of emissions reduced.

Response: The level of MACT for existing sources is based on the best performing 12 percent of facilities in the source category, not on a specific number or percent reduction. The commenter offered no specific suggestions on alternative on grouping sources to achieve additional emission reductions, or any other specific data to justify increasing the stringency of the proposed rule.

6.6 Subcategorization

Comment: One commenter (IV-D-71) claims that EPA has failed to properly subcategorize based on similar sources as required by the Clean Air Act, noting that the similarity of sources within each group would ensure that the floor was achievable for the group members. According to the commenter, EPA has based its proposed above-the-floor 95% capture-and-control requirement on one overriding belief that the open molding process is similar to the spray finishing process. The commenter states that this belief has been publicly stated on numerous occasions by EPA and its technical contractor as the justification for the above-the-floor requirement. According to the commenter, the technical feasibility of Method 204 and the various cost assumptions in the proposed rules are supported solely upon this belief. The commenter maintains, however, that open molding processes are not similar to spray finishing process. The commenter identifies the following differences:

1. Process steps - spray finishing is a one-step process while open molding is a multi-step process

2. Number of workers - spray finishing uses one worker inside the enclosure while open molding uses many workers

3. Exposure - spray finishing usually allows the operator to stand back from the high exposure area and can easily wear an effective positive pressure respirator if overexposed while in open molding workers are usually highly exposed and cannot wear effective positive pressure respirators

4. Extra steps - spray finishing requires no additional manual steps after application while in open molding freshly applied laminate requires manual rollout

5. Cure time - spray finishing has a quick cure and cure can be forced in a paint oven while open molding has longer cure time in order to allow for processing of the laminate

Response: We disagree with the basic proposition of the commenter that dissimilar sources were used in setting the floor and that we based setting the floor on spray finishing processes. While we think there are similarities (and differences) between open molding processes and spray finishing processes, there are facilities in the reinforced plastic composites industry using add-on controls, and these facilities make products very similar to those made by the commenter. The commenter produces bathware, the facilities that form the basis of the 95 percent capture and control requirement are A.R.E. and American Standard. These facilities make truck caps and bathware. Therefore, we disagree with the commenter that we have improperly subcategorized the industry and that the technical feasibility of Method 204 and the various cost assumptions are based on the spray finishing process.

It should also be noted that the discussion of spray processes was in reference to the ability of facilities to use permanent total enclosures in production processes that produce large parts. The facility submitting this comment does not produce large parts.

Comment: One commenter (IV-D-71) claims that EPA failed to satisfy several statutory requirements of the Clean Air Act that serve as safeguard against this otherwise extremely burdensome rule, including an improper and inadequate subcategorization of the industry that incorrectly lumps together dissimilar sources with fundamental differences that affect the feasibility of add on controls. The commenter illustrates this claim by stating that EPA would have us believe that the commenter's plants, which produce fiberglass bathware, are in the same category as A.R.E., which derives more than half of its HAP emissions from the spray finishing of automotive-type parts.

Response: As noted in the previous response, we disagree with the commenter that we have improperly subcategorized the industry. The fact that one open molder produces fiberglass bathware while another open molder produces automotive parts in and of itself does not dictate that each should be in a separate subcategory. For example, a facility such as A.R.E., that produces truck caps, goes through a process of preparing an open mold, applying gel coat to the mold in a spray booth, allowing the gel coat to cure, applying laminating resin in a spray booth, allowing the resin to cure, and demolding the part. In bathware manufacturing the process steps are the same, except that more steps may be required to laminate the part and add reinforcing materials. The open molds are a similar size, and the resins and spray equipment are similar. The specific example noted by the commenter refers to the fact that one open molder derives more than half of its HAP emissions from spray finishing. The spray finishing operation occurs in a separate part of the plant after the reinforced plastic composites part is manufactured and demolded. This collocation of a spray finishing operation was not used in the determination of the subcategorization and has no bearing on the use of the control device at the A.R.E. facility (i.e., the facility would still have installed the control device in the absence of their spray finishing operations) or on the feasibility of add-on controls. In other words, the spray finishing operations are irrelevant to the analysis conducted for the reinforced plastic composite source category in general and to the subcategorization decision for open molding. Therefore, we disagree with the commenter's claim that we have improperly and inadequately subcategorized the industry.

Comment: One commenter (IV-D-78) notes that the proposed NESHAP is straightforward in part because it does not subcategorize, but the lack of subcategorization might reduce the opportunity to further reduce HAP emissions. The commenter agrees that containment strategies (such as closed molding or total enclosures) that work well for small items are problematic for large items, but containment strategies could be required as MACT for a subcategory of operations manufacturing items smaller than a certain size. The commenter suggests that EPA subcategorize if doing so will result in greater HAP emission reductions.

Response: While we appreciate the intent of the commenter's suggestion to further subcategorize the industry if doing so will result in greater HAP emission reductions, we can find no practical way to do so and still have a rule that is reasonable to enforce. As outlined in the discussion of subcategorization in Chapter 4 of the Background Information Document for the proposed rule, we looked at several possible subcategorization schemes. As discussed in Chapter 4, we believe that the current scheme is the most reasonable. We do not have any data to suggest that further subcategorization based on product size would result in additional emission reductions. However, it could result in situations where a facility making a product of a certain size would be unable to change the size of their product without triggering additional control requirements.

We do note, however, that we have combined two process groupings (non-corrosion, mechanical filled and non-corrosion, mechanical unfilled) because the technical distinction used to create the two separate process groupings (the ability to use non-atomization techniques) no longer exists. In general, there is little if any change in the amount of emission reduction achieved by combining these two process groupings.

6.7 Economic Analysis

6.7.1 <u>Inaccurate</u>

<u>Comment</u>: One commenter (IV-D-71) believes EPA failed to satisfy several statutory requirements of the Clean Air Act that serve as safeguards against this otherwise extremely burdensome rule. In particular, the commenter claims that the economic impact analysis is inaccurate and greatly understates the real cost of control.

A second commenter (IV-D-98) believes the modeling approach used is fundamentally inappropriate for an industry as diverse as the composites industry. The commenter states that the modeling approach demands a vast amount of data on the entire industry, none of which EPA collected. The commenter claims that EPA has made incorrect assumptions. Three specific errors claimed are captive facilities will be supported by their parent companies, all facilities owned by large businesses are captive facilities, and a 4.4% average return for the industry.

Different assumptions, which are equally or more plausible, would lead to very different analytical conclusions. Using a different analysis, the commenter states that virtually none of the facilities required to install capture-and-control would be able to afford it.

The commenter also notes that cost estimates developed by the CFA are at least 2.4 times higher than EPA's. CFA's analysis indicates that facilities that require capture and control represent only 15% of industry production but face 65% of all costs of the rule for existing facilities. These affected facilities will not be able to recover their costs through product prices because they will be in direct competition with companies that are not subject to these costly requirements.

A third commenter (IV-D-71) stated that they analyzed the affordability of the proposed rule requirement for add-on controls both internally and as part of the analysis of ten businesses conducted for CFA. The commenter states that their internal analysis found a significant impact on both capital expenses and annual operating expenses. The commenter states that the CFA analysis found add-on controls to be a "significant burden, possibly not affordable" for one of their plants and "probably not affordable" for another of their plants. The commenter concludes that the imposition of add-on controls would not only cripple their company, but would likely cause it to terminate business altogether.

Response: The comments on the economic analysis were mainly in response to the above-the-floor requirement for existing sources in the proposed rule that affected the open molding and pultrusion process/product groupings. In developing the proposed rule, we developed capital and total annual costs for several regulatory options, including the option in the proposed rule. These costs were based on what we considered to be the best data available at the time. The economic analysis inputs are based on the control costs. The significant economic impacts mentioned by the commenters were based on a different set of cost inputs. Therefore, it is inappropriate to directly compare results of industry economic analyses and our analyses.

Since proposal of the rule, we have revised our capital and annual costs for add-on controls. These costs are now significantly higher than we calculated at proposal, and as a result, we have removed the above-the-floor requirements for existing sources in the open molding and pultrusion process product groupings. Therefore, some of the comments on our economic analysis are now moot. However, we are providing responses to the comments relating to the basic methodology in the following paragraphs.

We conducted a detailed economic analysis consistent with the requirements of the CAA and EO 12866. Furthermore, as required by section 609(b) of the RFA, as amended by SBREFA, the Agency convened a Small Business Advocacy Review (SBAR) Panel to obtain advice and recommendations of representatives of the small entities that potentially would be subject to the rule's requirements. Prior to convening the SBAR panel, EPA conducted a “sales test” for small businesses based on a draft of this proposed rule. The results of that analysis indicated much more significant impacts on small entities than the rule as it is currently being proposed. The reduction in impacts are a direct result of the SBAR Panel recommendations incorporated in this proposed rule.

In terms of the “burden” of the proposed MACT standard, the results of the initial regulatory flexibility analysis (IRFA) demonstrates the measures computed by the Agency for both small and large businesses owning facilities subject to the standard. Based on the Agency’s estimated compliance costs, Table 5-1 from the EIA report summarizes these findings and is reproduced below. As shown, only one of the 78 large companies is expected to incur compliance costs that are greater than 3 percent of its sales. The remaining 77 large companies are expected to incur compliance costs less than 1 percent of their sales. According to the Census Bureau’s Quarterly Financial Report (QFR), profitability within this industry ranged from 3 to 6.5 percent of sales from 1995 through 1999. In light of the profit rates typical of this industry, the Agency did not find widespread evidence as claimed by the industry that these companies could not afford the control requirements.

In conducting the EIA, the Agency employed an economic methodology consistent with the analytical requirements of the CAA and EO 12866. Based on this approach, we developed and employed a partial equilibrium economic model that was specifically tailored to the reinforced plastics industry in order to best determine the potential loss in market share and facility closures. For example,

a) It utilized the best available information on the facilities operating in the industry and the companies that own those facilities using industry responses to EPA survey and publicly available data

Table 5-1. Summary Statistics for SBREFA Screening Analysis: Recommended Alternative

	Small		Large		All Companies	
Total Number of Companies	278		78		356	
Total Annual Compliance Costs (TACC) ($\$10^6$)	$8.1		$18.0		$26.1	
Average (TACC) per company ($\$10^6$)	$0.03		$0.23		$0.07	
	Number	Share	Number	Share	Number	Share
Companies with Sales [Data]	275	100%	78	100%	353	100%
Compliance costs are <1% of sales	222	81%	77	99%	299	85%
Compliance costs are $1 to 3% of sales	46	17%	0	0%	46	13%
Compliance costs are $3% of sales	7	3%	1	1%	8	2%
Compliance Cost-to-Sales Ratios						
Average	0.66%		0.07%		0.53%	
Median	0.40%		<0.01%		0.21%	
Maximum	7.50%		3.53%		7.50%	
Minimum	0.01%		<0.01%		<0.01%	

[a] Annual sales data were unavailable for three ultimate parent companies. CSRs cannot be computed for these companies.

Note: Assumes no market responses (i.e., price and output adjustments) by regulated entities.

sources, e.g., Dun & Bradstreet, SEC, company websites.

b) It conformed with the product market definitions for which data is reported by the Society of the Plastics Industry, Inc. (SPI) and those products reported as being manufactured by the individual facilities in their survey responses.

c) It used conservative assumptions so as not to understate impacts. For example, thermoplastic products are unaffected by the regulation and are treated in the economic model as perfect substitutes for affected thermoset products in determining market impacts. This conservative assumption would tend to overstate the ability of these substitute products to increase market share at expense of affected products and associated likelihood of facility closure.

The EIA report also provided sensitivity analysis to key model parameters to indicate the significance of alternative values, e.g., profit rates and demand elasticity.

6.7.2 Captive vs. merchant

Comment: Several commenters (IV-D-50; IV-D-58; IV-D-71; IV-D-82) claim that EPA mistakenly assumed that they are "captive" divisions of their parent companies. In some cases the commenter sais they were actually not a large business. They believe that EPA has assumed that all facilities that are classified as part of a large business can bear any control costs because we assume that the parent company will absorb the additional cost. They state that this is not the case. Their reinforced plastic composites operations must return an acceptable profit. Otherwise the parent company will shut down the operation and outsource. Some businesses we classifies as large, stated that they are actual merchant, and cannot pass through additional costs to customers. One commenter stated that, under the CAA, affordability of capture-and-control technology is of central relevance both to EPA's above-the-floor proposal and to determining new source MACT. Another commenter claimed that the proposed rule provides a clear incentive to shift production from large facilities to smaller facilities or facilities owned by smaller businesses.

Response: For the economic impact analysis, EPA did not have facility-specific data necessary to classify facilities as merchant/captive producers. Instead, the Agency assumed facilities that were owned by large parent companies were more likely to provide intermediate RPC's for their parent company. Absent additional facility-specific data on the relationships between parent companies and facilities, this method still appears to be a reasonable.

The captive/merchant assumption does not imply that the Agency failed to perform any economic analysis for affected captive facilities and the approach certainly does not assume large firms can always afford any compliance costs. As shown above in Table 5-1, we analyzed company-level impacts for all firms owning RPC facilities by comparing total annual company costs to total company revenue (see further details in Chapter 5 of EIA report), regardless of their captive or merchant designation. However, the Agency has improved the final EIA to address several concerns by including a similar screening analysis for captive facilities using our estimated facility-level revenue, costs, and profits. Results of this analysis will be incorporated in the EIA report particularly as it related to estimates of facility closures.

As noted in Table 5-1 from the EIA report, the compliance cost share of sales for the facilities owned by large companies (i.e., defined as captive for this analysis) appears to be very low with an average less than 0.1 percent and median less than 0.01 percent. Therefore, the potential for outsourcing does not seem likely in response to regulation. This decision would need to be made on an individual basis so we do not rule it out altogether; however, it is important to note that it is highly unlikely when 1) merchant producers offering similar products will have increased prices with regulation, and 2) substitute materials suffer from important quality differences and will possibly also see their prices increasing with regulation or involve higher processing costs to adapt to these substitute materials.

6.7.3 Large business and cost of control

Comment: One commenter (IV-D-94) believes EPA must reconsider the conclusion that large businesses can afford capture-and-control. The commenter points out that EPA assumed that facilities owned by “large businesses” would have greater access to capital than “small businesses” and can better afford 95% capture-and-control. The commenter notes that they operate each entity as a separate profit center and if a particular facility does not show a reasonable profit margin, it will face sale or closure, particularly in periods of economic slowdown. The commenter points out that all businesses borrow money for capital expenditures and that banks, holding companies, and corporations are not anxious to make investments in capital not expected increase profit. According to the commenter, it would be difficult to convince a bank to loan money for equipment that will consume 70% to 94% of the profit of a business, especially when the control cost effectiveness is $17,000 per ton of HAP removed.

A second commenter (IV-D-82) also indicates that the assumption that parent businesses will have the resources and the will to install control equipment is incorrect.

Response: This comment related to our decision to remove the above-the-floor control requirements for most small businesses. This decision was based strictly on our belief that small businesses would have more difficulty raising capital to purchase add-on controls that large businesses. However, as discussed above, we have removed the above-the-floor requirements for most facilities and have established a single threshold for the operations where the above-the-floor requirement still applies. Therefore, this issue is now moot.

We realize that any business makes decisions based on their profit level, regardless of whether it is a stand alone business or a subsidiary of a larger firm. However, in terms of access to capital, there are differences between small and large businesses based on their financial assets and condition. It is commonly accepted that large firms generally have more assets available and can obtain financing easier than small firms. This is the reason the small businesses loan guarantee program was initiated by the Small Business Administration (SBA). Both SBA and Congress have recognized the fact that small business faces greater hurdles in raising capital than large business. Therefore, we still believe that setting different thresholds for large and small business in the proposed rule was reasonable.

7.0 ABOVE-THE-FLOOR REQUIREMENTS - EXISTING SOURCES

7.1 Remove Requirement

Comment: Several commenters (IV-D-71; IV-D-72; IV-D-98; IV-D-102; IV-D-82) request that the above-the-floor 95% capture-and-control requirement be removed for a number of reasons.

Commenter IV-D-71 requested that the above-the-floor 95% capture-and-control requirement be removed for the following reasons:

- Infeasible - many aspects cannot be technically achieved
- Impractical - even where possible through extraordinary means, the resulting systems would not be practical
- Unaffordable - the cost of controls is much greater than EPA assumed and is not affordable
- Unsupported by data - most of the key assumptions are unsubstantiated and rely on mistaken beliefs and misleading data
- Adverse Environmental Impact - add-on controls will reduce expenditures on and development of pollution prevention, increase greenhouse gas emissions, and result in a net increase in emissions.

Commenter IV-D-71 also states that EPA relied on just two plants for the factual basis for the above-the-floor proposal. The commenter notes that these baseline plants are only two out of a total of 433 plants in EPA's database, and are only two out of dozens of other plants that have some type of existing capture-and-control system.

Further, Commenter IV-D-71 does not believe that these two plants actually achieve 95% capture-and-control. Industry representatives have not been allowed access to the plants to whether or not their capture systems are 100% effective and their control systems are achieving 95% or better destruction. When questioned about these problems during the rulemaking, the commenter claims EPA discounted objections by expressing a fundamental belief that open molding is similar to spray finishing and therefore could achieve a high degree of capture-and-control. However, the commenter states, open molding is quite different from spray finishing in ways that prevent a high degree of capture-and-control.

Commenter IV-D-72 adds that the basis for the above-the-floor controls specified in the proposed rule must either be fully disclosed or the proposals withdrawn. The commenter states that EPA based the 95% control proposal on two facilities but did not identify the facilities in the proposed rule – it is necessary to refer to the Background Information Document to identify the facilities. The commenter points out that both of these facilities are in Ohio and therefore the commenter maintains cannot be considered geographically representative of the industry. The commenter also states that references to the range in size of the facilities are misleading as there are only two facilities with no intermediate values between the low and high end of the range. According to the commenter, EPA admits that one facility has not actually achieved 95% control. In summary, the commenter maintains that EPA has failed to make the required showing that the proposed above-the-floor requirement is achievable, that the industry through its trade association, CFA, has been unable to obtain information independently from these facilities, and that EPA's determination in the Boat MACT that above-the-floor controls were unnecessary raises the question of whether this decision in the RPC composites MACT is arbitrary and capricious.

Commenter IV-D-98 claims that EPA's proposal fails to present a factual case for capture-and-control for open molding that meets statutory requirements. The commenter points out that EPA's factual support for 95% as feasible control requirement is based on two facilities. According to this commenter, EPA has not shown that the two facilities have achieved 95% capture-and-control, where capture of 100% of emissions is the real issue. The commenter agrees with EPA that 95% combustion efficiency can be achieved once the emissions are captured and concentrated to a combustible density, but claims that EPA did not provide sufficient documentation to illustrate that either facility can demonstrate 100% capture according to method 204. The commenter also states that, in fact, EPA admits that one facility has a permit requirement to meet 95% control, but has not yet met that requirement during testing.

Commenter IV-D-98 identifies five items that they claim need to be addressed in evaluating the feasibility of 100 percent capture:

1. Were operations tested representative of normal range of manufacturing functions and normal operating conditions? For example, were doors and windows that would normally be opened during some or all of the operation closed during the test?

2. How were each of the requirements of Method 204 assessed and how were ambiguities resolved? For example, were vinyl strip curtains or air curtains used in place of a door? Were smoke or dust devices used to determine air flow instead of instruments? Was there any independent indication of actual capture efficiencies separate from the Method 204 tests?

3. How was the production line set up to accommodate the movements of molds, products, materials, and workers through the process while still maintaining the integrity of the Method 204 enclosure?

4. What were the worker exposures to HAP, to heat stress, and to obstacles to emergency egress? Were these conditions consistent with good industrial hygiene practice and with OSHA rules?

5. In cases where one or more walls of the building constituted a wall of the enclosure, were engineering evaluations made of wind loads and enclosure leaks during various weather conditions?

This commenter states that EPA's record as found in the technical support document undermines the claim of 95% capture-and-control. Further, according to the commenter, the documented record fails to provide sufficient information to independently determine the capture-and-control efficiency of the two facilities. For example, the commenter noted that the record does not contain a trip report on the American Standard facility. The commenter states that they should be given the opportunity to visit these facilities or more information should be provided with which to independently evaluate the two facilities.

Commenter IV-D-105 requests that EPA use its discretion and remove the 95% capture-and-control requirement. This commenter offers several concerns in support of this request – the facility produces barge covers, environmental covers, and track collector pans; the products very greatly in size; the product lines are cyclical and must share production space; and therefore, it is impossible to design and install and workable capture-and-control system.

Commenter IV-D-82 points out that EPA based its decision to require 95% capture-and-control for certain facilities on the experience of two facilities using capture-and-control for open molding. According to the commenter, the claim that these facilities actually achieve that level of control has not been demonstrated. The commenter states that the docket information indicates that capture efficiency at one facility was determined with a “smoke test” much less stringent than Method 204.

Response: Based on a re-analysis of the costs associated with the above-the-floor capture and control requirement for existing sources, we have removed the above-the-floor capture and control requirement for all existing sources except for facilities in two process groupings – centrifugal casting and continuous lamination/continuous casting. The cost per ton of HAP emissions reductions increased significantly (as described in more detail in Section 9.0), and we determined that the proposed above-the-floor requirement was not cost-effective. Therefore, for the process groupings for which we have dropped the above-the-floor requirement, we consider the commenters objections to the above-the-floor requirement “moot.” For the two remaining process groupings for existing sources, there are no issues associated with the level of performance or the technical feasibility of control. For centrifugal casting, one facility (Fibercast) is already controlling their centrifugal casting emissions in a control device that achieves 95 percent reduction. Similarly, two facilities in the continuous lamination/continuous casting process grouping (Enduro Fiberglass and Crane Kemlite) are controlling their emissions using add-on controls that achieve a 83 and 78 percent emissions reduction respectively. We received no comments from facilities in the continuous lamination/casting process grouping to indicate that they believe that a 95 percent control level was infeasible.

7.2 Relationship to Boat MACT

Comment: One commenter (IV-D-59) is very concerned that above-the-floor control requirements were determined to be infeasible for the Boat MACT but such requirements have been proposed for the RPC MACT even though, according to the commenter, the processes are very similar. The commenter states that EPA’s main response to the question of how two very similar industries could have such different standards has been that the CAAA directed that the two categories be considered separately. The commenter believes this response is insufficient given the overwhelming economic impact of the proposed RPC MACT. The commenter claims that there are no defensible technical reasons for distinguishing between boat manufacturing and RPC. The commenter points out that a facility, such as the commenter's, could hypothetically switch to boat manufacturing to avoid the add-on control requirements of the RPC MACT. The commenter claims that EPA's economic analysis is clearly fatally flawed to come up with such different economic conclusions for such closely related industries and believes that, if EPA has ignored relevant data, this action is arbitrary and capricious. In conclusion, the commenter maintains that EPA should discard the above-the-floor control requirement and conform the RPC MACT to the already-issued Boat Manufacturing MACT.

Response: As the processes used in Boat manufacturing industry most resembles the open molding process grouping in the reinforced plastic composites source category, we believe the primary focus of the commenters is on the above-the-floor requirement as it pertains to open molding. As noted in the previous response, the re-analysis of the proposed above-the-floor requirement resulted in the final rule dropping the above-the-floor requirement for open molding and most other process groupings. In the final rule, we are retaining the above-the-floor requirements for two process groupings – centrifugal casting and continuous lamination/continuous casting. The production processes for these two process groupings are very dissimilar to those used in the Boat MACT. Therefore, for us to reach a conclusion different from the Boat MACT with regard to above-the-floor requirements for these two process groupings is not surprising and can not be considered "arbitrary or capricious."

7.3 Basis Not Demonstrated, Facilities Not Representative

Comment: One commenter (IV-D-98) claims that EPA's attempt to document the general achievability of 95% capture and control across the entire open molding category is not credible. The commenter states that EPA's approach to setting the above-the-floor and new source requirements is inconsistent with its approach to setting the floors for existing facilities. The commenter notes that EPA recognizes the extraordinary diversity of the reinforced plastic composites industry, both in terms of facility characteristics and types of products manufactured, but EPA relied on only two facilities for the above-the-floor and new source requirements and then generalizes them to the entire industry. The commenter then states that EPA provides an inadequate analysis to support that those two facilities are representative of all covered facilities that emit over the specified threshold. The commenter identifies five items as to why EPA's attempt to document the general achievability of 95% capture-and-control across the entire open molding category is not credible: (1) large parts, (2) enclosure exhaust concentrations, (3) worker safety, (4) costs, and (5) affordability.

Response: As noted previously, under the final rule, open molding sources are not required to comply with an above-the-floor requirement that would likely have required the use of add-on control devices. Therefore, we do not see the need to address the particular arguments presented by the commenters.

Comment: One commenter (IV-D-82) claims that the two facilities used to develop the 95% control requirement are not representative of the diverse industry. The commenter maintains that EPA's indication that "no data" suggests that the air flows and HAP concentrations are not adequately represented is not sufficient support for their claim. The commenter believes the two companies are not representative for several reasons. One facility (American Standard) has only one product line (bathtubs), which is unlike the majority of the industry and that facility uses a proprietary curing process with ovens, unlike most of the industry which allows curing in open areas. The second facility (A.R.E) combines emissions with coating emissions, while most of the industry does not apply coatings to their products. The commenter concludes by stating that it is not reasonable to use two facilities out of 433 to represent a diverse industry and especially the two chosen as "representative."

Response: This is an open molding comment concerning the proposed above-the-floor requirement. As noted previously, under the final rule, open molding sources are not required to comply with an above-the-floor requirement, which would likely have required the use of add-on control devices. Although we do not see the need to address the particular arguments presented by the commenters because there is no longer an above-the-floor requirement for open molding sources, we continue to believe that the open molding facilities using control devices are representative of other open molding facilities on the basis of such factors as the concentration of HAP to the control device.

7.4 Feasibility of Carbon Adsorbers

Comment: Two commenters (IV-D-71; IV-D-58) expressed concern with carbon adsorbers. Commenter IV-D-71 requests EPA to carefully evaluate the practical long-term efficiency of the adsorb/desorb unit and its effect on the above-the-floor add-on control efficiency requirement before proceeding to the final rule. The commenter states that what really is being proposed is a 95% capture-and-adsorb-and-control requirement, but overlooks a key fact that EPA is assuming capture is 100% and is assuming that adsorption efficiency is also 100%, without explaining this underlying assumption anywhere in the rule. The commenter is concerned that the actual adsorb efficiency is less than 100%, based on information found in several EPA technical documents where the actual lifetime efficiency of the adsorb/desorb unit could range from 90 to 98%. The commenter maintains that the adsorb/desorb unit could completely fail to perform at some point for a variety of reasons and such a failure would result in 0% capture-and-control, even though the enclosures and the add-on control equipment would appear to be working properly.

Commenter IV-D-58 claims that a carbon absorber can not be used as a control device at a composite plant with a sufficient degree of reliability. This commenter states that this lack of reliability is one of the main reasons they use straight RTO systems without preconcentrators. The commenter states that, in proposing 95% capture-and-control with a preconcentrator, which the commenter says is really 95% capture-and-adsorb-and-control, EPA silently assumed the adsorption efficiency of the absorber to be 100%. According to the commenter, for the exhaust concentrations at most plants, the actual efficiency would vary from 90 to 98%. The commenter also believes that it is possible that the unit would fail entirely.

Commenter IV-D-58 also states that preconcentrators have three major drawbacks that make demonstrating compliance difficult: no available parametric measure can show absorber efficiency, continuous or semi-continuous FID is the only and practical alternative, automated FID equipment is very expensive to operate, is unreliable, and prone to periods of malfunction.

Response: The facilities that form the basis of the 95 percent capture and control option use thermal oxidizers, not carbon adsorbers. However, we believe that a concentrator/oxidizer is the best system for control of these types of streams from both a cost and an environmental perspective. In general, oxidizers are 98 to 99 percent efficient when combusting streams containing concentration of organic HAP of 1000 ppmv or more. The oxidizers that have actually been applied in this industry typically do not achieve 98 to 99 percent reduction efficiency because the inlet streams are in the 50 to 100 ppmv range. However, when combined with a concentrator, we would expect oxidizer efficiency to reach the 98 to 99 percent level because the inlet stream will be more concentrated. Therefore, the absorber itself must only meet a removal level of 96 to 97 percent, not the 100 percent stated by the commenter. Adsorbers (either using carbon or a polymeric adsorbant) can achieve 96 to 97 percent removal when applied to the dilute inlet streams common in this industry. Therefore, concentrator oxidizer systems can achieve a 95 percent overall removal.

7.5 Inability to Install, Operate, and Maintain Add-on Controls

Comment: Several commenters (IV-D-111; IV-D-58; IV-D-54) expressed concern over the ability to install, operate, and maintain add-on controls at reinforced plastic composites facilities. Commenter IV-D-111 states that installation of a preconcentrator and thermal oxidizer system is infeasible at some of their plants due to (1) space limitations (no room on property to install system), (2) property is leased and owner may not grant permission to allow add-ons to be installed, (3) lack of available natural gas supply and electrical power capacity and if not available, EPA did not cost getting these utilities to facilities, (4) production of greenhouse gases which may not be permitted by EPA or state regulatory agencies in the future, and (5) complaints by neighbors due to noise (which would not be known until after installation and could create a serious problem if the neighbors claim that the plant constitutes a public nuisance.

Commenter IV-D-58 states that the reinforced plastic composites industry has difficulty employing the technical expertise required to maintain sophisticated systems that are required to run thermal oxidation equipment. The commenter notes that they have been running oxidizers since 1984, but have only been able to staff maintenance personnel with a maximum of a high school education at best because of the type of work the person must do on a daily basis (over 90% of the time, the persons working on dirty resin covered pumps, spray equipment and mixing systems in order to maintain and support operations by repairing equipment). The commenter further states that the composites industry has a very difficult time employing people with the technical expertise necessary to operate and maintain control systems. The commenter points out that their operating permits only allow for a few days of RTO downtime before they must shut down the production lines. Failure of control equipment, which could be as simple as a broken temperature sensor, would require shutting down production until a trained technician can troubleshoot and fix the problem and replace the parts. According to the commenter, the plant would be required to send the employees home without pay until the equipment was repaired.

Commenter IV-D-54 states that thermal oxidation is complex and sometimes difficult to design, operate, and maintain and therefore is not advisable. According to the commenter, such control systems are challenging for a large corporation to run and many facilities that will be required to use capture-and-control will not have the support and experience available to successfully run these systems. As a result, the commenter states, thermal oxidation units will probably suffer long periods of downtime and possibly non-compliance.

Response: We do not agree with the concerns raised by the commenters. Facilities in the reinforced plastic composite industry and in other industries (printing and publishing, surfacing coating operations) have installed, operated, and maintained add-on controls, including thermal oxidizers. The final rule reduces the number of facilities likely to be required to install, operate, and maintain add-on controls by eliminating the above-the-floor requirement for existing process groupings (except for centrifugal casting and continuous lamination/continuous casting).

7.6 Polyad Testing

Comment: One commenter (IV-D-39) stated that they recently changed over to non-atomized sprayers in the acrylic spray booth at one plant. The commenter noted that the Polyad stack testing was conducted with atomized sprayers but not with the new non-atomized sprayers. The commenter expressed concern over what impact, if any, the new sprays will have on the adsorption/desorption capabilities of the unit. The commenter noted that testing is scheduled in the near future and requests additional time to comment based on the test results. The commenter stated that they are willing to provide EPA with the stack test data once they become available.

Response: At the time this document was prepared test data for this facility were still not available. Therefore, we cannot respond to this comment.

7.7 Cost Effective/Not Cost Effective

Comment: One commenter (IV-D-76) notes that EPA states that industry cost estimates are as much as three times greater than their own. The commenter points out that cost estimates for controls have historically been higher than actual controls. The commenter believes that, compared to existing state and Federal programs, EPA estimates an average cost for existing sources from implementing the rule at $1600 per ton of HAP reduced for existing sources and $2200 for new sources are modest in the context of controlling HAP emissions and extremely low for controlling VOCs, even given the relative accuracy of costs. The commenter notes that there is much discussion on the cost of add-on control, but no information in the proposal supporting the common knowledge that air pollution devices to control HAP and VOC emissions achieve greater efficiencies frequently at lower cost and much greater reliability. The commenter also states that the technologies are proven, available, and cost effective.

Response: In general, we agree with the commenter that the add-on control technologies are proven, available, and, in many instances, cost effective. In response to the public comments, we have found it necessary to make numerous changes to the costing performed at proposal to improve the costing algorithms and to reflect more accurately actual facility data and operations. On the basis of the revised cost analysis, the costs have increased from those generated in support of the proposed rule. Therefore, while we are grateful for the commenter's comments, our best cost analysis shows an increase in anticipated costs associated with above-the-floor add-on control devices and these revised costs have been used in the developing the final rule.

Comment: Two commenters (IV-D-105; IV-D-94) expressed concerns with the cost of 95% control. Commenter IV-D-105 requests that EPA use its discretion and remove the 95% capture-and-control requirement. This commenter states that the cost of installing thermal oxidizers at their facility is estimated to be over $2 million, with annual operating costs greater than $5 million. According to the commenter, the facility is a stand-alone profit center and the corporate offices are not likely to see this as viable.

Commenter IV-D-105 notes that their facility must meet the add-on control requirement because they have more than 500 employees corporate wide. The commenter points out that their facility competes directly with other companies that do not have to meet the control requirement because they are considered “small”. The commenter states that different requirement of “large” versus “small” companies is totally discretionary on EPA’s part and will affect a small number of companies. According to the commenter, these “large” companies would be considered only medium-sized in most industries and their facility is a “small” company when considered as a stand-alone facility.

Commenter IV-D-105 states that EPA is legally required to consider costs in this portion of its decision and has already decided that add-on controls are too expensive for companies that meet the Small Business Administration’s definition of “small business” and for companies in the boat building portion of the composites industry. The commenter claims that the 30 or so companies that will be required to install capture-and-control will be forced to shoulder more than two-thirds of the total cost of this rule, or, more likely, to close down.

Commenter IV-D-94 believes that EPA has under estimated the cost of the above-the-floor 95% capture-and-control and should not require it in the Final Rule. The commenter claims that EPA did not adequately prove that this above-the-floor control requirement would be cost effective or affordable by the affected sources.

Furthermore, according to Commenter IV-D-94, EPA failed to demonstrate that the requirement would not create other environmental or non-environmental harm, or conflict with other regulations.

Response: As noted in the response to the previous comment, we have found it necessary to make numerous changes to the costing done at proposal to improve the costing algorithms and to reflect more accurately actual facility data and operations. On the basis of the revised cost analysis, the costs have increased from those generated in support of the proposed rule. Based on the revised costs, we have removed the above-the-floor requirement for all process groupings except centrifugal casting and continuous lamination/continuous casting. Therefore, the final rule does not require add-on controls for existing sources except for those using centrifugal casting or continuous lamination/continuous casting.

Comment: Commenter IV-D-73 expressed concern over the incremental cost effectiveness of the above-the-floor requirement for facilities that are already achieving high levels of emission reductions. The commenter refers to a vacuum assisted resin transfer molding (RTM) process, which reduced HAP emissions by 90% and was used to fabricate the full size model of the Virginia class bow dome and the DDG helo hangar full size test article, but this closed molding process does not meet the proposed regulation standards for existing sources. The commenter considers the cost of the 95% control level too high considering that emissions would only be reduced an additional 5% compared to VARTM. Further, the commenter points out that the preamble indicates that 5 facilities have high efficiency add-on controls with efficiencies ranging from 90 to 95%. The commenter states that the proposed requirement of 95% control will require four out of these five facilities to replace their existing high efficiency controls.

Response: First, we would like to point out that RTM processes were not required at proposal and are not required under the final rule to put on add-on controls. These processes were never subject to an above-the-floor requirement. Second, the overall efficiency achieved by a process in converting styrene into product is not relevant to determining whether or not it is cost effective to further reduce the actual emissions to the atmosphere. Third, in the incremental cost analysis we took into account facilities already achieving a high level of control using a control device by, in part, (1) assuming that the existing control device did not have sufficient excess capacity to handle the increased airflow and would be replaced and (2) crediting only the incremental emission reduction being achieved between 95 percent control and the current level of control (e.g., 90%). In summary, we believe that our cost analysis is analytically correct and the revised cost analysis has shown that the above-the-floor option is cost effective for only two process groupings.

7.8 Adverse Environmental Impacts

Comment: Several commenters (IV-D-24; IV-D-71; IV-D-98; IV-D-105; IV-D-82) expressed concerns about adverse environmental impacts resulting from the 95 percent capture and control requirement. They either requested that we remove the 95 percent capture and control requirement, or reduce the requirement to 75% for control devices that are more economical and environmentally friendly, such as a biofilter.

The commenters cited the trade off that occur where we are reducing one aid pollutant but increasing others (HAP for NO_x, SO_x, CO, PM). In addition to criteria pollutants, the commenters claimed that 30 tons of greenhouse gases are created for every ton of HAP controlled. They believe this is in conflict with EPA's effort to reduce greenhouse gas emissions. They also noted that thermal oxidizers consume large amounts of fuel (a finite natural resource).

Commenter IV-D-24 points out that alternative technologies, such as biofilters, offer the ability to reduce HAP emissions by more than 75% without the generation of greenhouse gases or the consumption of valuable natural resources and at less cost.

Commenter IV-D-71 points out similarities between the composites industry and the boat building industry, noting that both predominantly use open molding and gel coat processes, and that both rules have a point value system. The commenter then notes that the boat building MACT does not have an above-the-floor requirement. The commenter then refers to the Boat rule preamble which states that no increase in other air pollution emissions will occur because no boat manufacturing facility is expected to install any new combustion devices during the next five years. According to the commenter, the Boat MACT clearly anticipated that the avoidance of additional air emissions in the form of greenhouse gases is desirable. The commenter then states that, under the statute, an assessment of such non-air quality environmental impacts is required, yet the proposed composite rule does not even address the matter.

Commenter IV-D-71 also notes that, according to the Clean Air Act, Congress expects EPA to consider the non-air quality environmental impact of any above-the-floor limit. The commenter maintains that EPA has not properly discharged this duty, because the add-on control requirement contained in the proposed rule would have significant adverse non-air quality environmental impacts that are not addressed in the proposed rule. According to the commenter, EPA ignored the excess greenhouse gas emissions from the proposed oxidizers and understated the amount of natural gas that would be burned and the electrical power needed for the preconcentrator systems.

Commenter IV-D-98 notes that a dilute air stream often requires the use of supplementary fuel in order to achieve the required destruction efficiency and that this energy use results in collateral energy waste and environmental releases. According to the commenter, the commenter's contractors determined that the proposed capture-and-control systems if adopted at 18 typical plants would reduce styrene emissions by 146 tons each, and in doing so would consume 4377 MCF of natural gas and 2.33 kWh of electricity resulting in emissions totaling 4,569 tons, including greenhouse gases and criteria pollutants. The commenter points out that the CAA requires EPA to consider non-air quality health and environmental impacts and energy requirements. The commenter claims that EPA has not explained the rationale for reducing styrene by 146 tons while creating 4,569 tons of other pollutants.

Commenter IV-D-82 states that HAP emissions may actually increase as follows: By their very nature, large businesses must run a more organized and controlled operation than smaller businesses. As such, the pollution prevention efforts at large businesses are more effective than smaller businesses. If the capture-and-control requirement of this regulation causes the industry to shift to smaller businesses, EPA may inadvertently cause an increase in HAP emissions.

Commenter IV-D-68 states that thermal oxidation creates workplace safety issues.

Response: These comments related to the above-the-floor requirements in the proposed rule for open molding and pultrusion operations. There requirements have been removed from the final rule, therefore, most of these comments as they relate to the above-the-floor requirements have become moot.

However, two process groupings are still required to meet an above-the-floor requirement -- centrifugal casting and continuous lamination/continuous casting. Three facilities in these two process groupings are already controlling there emissions using add-on control devices which achieve control levels ranging from 70 to 95 percent. Therefore, we believe 95 percent capture and control is still a reasonable above-the-floor alternative to consider for these process groupings.

Though we have removed the above-the-floor capture and control requirements from the final rule, similar comments were also made concerning capture and control requirements for new sources. Therefore, we address these comments as they relate to open molding and pultrusion below and in Chapter 20 of this document, which presents comments and responses concerning new sources.

Chapter 7 of the background information document (BID) presents the environmental and energy impact analysis conducted in support of the proposed rule. Environmental impacts presented are primary air impacts (HAP emission reductions), secondary air impacts, solid waste impacts, and wastewater impacts. Secondary air impacts included examining the increase in air emissions of SO2/SOx, NO_x, CO, and PM10 due to the increased energy usage at utilities and the increased energy usage due to the installation of add-on control devices (i.e., thermal oxidizers). We believe that the environmental impacts examined are sufficient to support this and other standards prepared under the Clean Air Act.

The commenters claim that the environmental analysis is insufficient because greenhouse gases were not considered. The commenters state that 30 tons of greenhouse gases are produced for each ton of styrene emissions reduction.

We reviewed the information that formed the basis of the estimate of greenhouse gas estimates. Based on our analysis, we believe that the estimate of 30 tons of greenhouse gases are produced for every ton of styrene emissions reduction is an overestimate because it is based on examples where the HAP emissions reduction varies between 77 to 84 percent. The rule will require 95 percent HAP emissions reduction. Also, we believe the air flows used in the examples provided by the commenter are biased high. Higher air flows result in increased use of natural gas, and higher greenhouse gas emissions. We believe a more accurate number would be approximately 20 tons of greenhouse gases produced for every ton of styrene emissions reduction.

Second, regardless of which number is the most accurate (30 or 20), any contribution of this rule to global greenhouse gas emissions is insignificant. The total greenhouse gas emissions in the united States exceed 6 trillion tons from fossil fuel combustion alone. However, the difference between emissions of styrene from a facility controlled to the 95 percent level, and one controlled using only pollution prevention, is significant to the populations living near an affected facility.

The commenters also claim that we understated the amount of natural gas and electricity required operate the thermal oxidizers. In the revised cost analysis, we have adjusted the target HAP concentration (lowered it from 100 ppm to 50 ppm) and revised the fan power equation. Both of these corrections should adequately address this particular comment.

Thermal oxidizers have been installed and operated in this industry, and many others, for years. We know of no safety issues that would preclude their operation at any facility with proper design and operation.

7.9 Energy Impacts

Comment: One commenter (IV-D-71) notes that according to the Clean Air Act, Congress expects EPA to consider the energy impacts of any above-the-floor limit. The commenter claims that EPA neglected to properly assess the significant adverse energy impact of the above-the-floor add-on control requirement contained in the proposed rule. According to the commenter, rather than investigate the actual energy usage associated with add-on controls, EPA estimated energy usage based on flawed assumptions. The commenter claims EPA's energy usage figure grossly underestimates the actual energy usage that would result from the add-on control requirement and completely ignored the fact that add-on controls would more than double the annual energy usage at each affected facility. The commenter then provided a summary of their estimated energy usage to comply with add-on controls at their three facilities.

The commenter also states that if the add-on control requirement is retained in the final rule, EPA should properly assess the actual energy impact of add-on controls by (1) revising the underlying capture-and-control design assumptions that affect energy usage, (2) revise its electricity and natural gas costs to reflect realistic utility rates at reinforced plastics facilities (national averages are not representative), and (3) express the energy impact of add-on controls as a percentage increase in overall energy usage at affected plants.

Finally, the commenter adds that EPA failed to satisfy several statutory requirements of the Clean Air Act that serve as safeguard against this otherwise extremely burdensome rule, including the requirement to properly conduct an energy impact analysis of the add-on control proposal.

Response: For the proposed rule and for the final rule, we have examined the energy impacts as required by the Clean Air Act when setting standards under Section 112. These impacts were reported in Chapter 7 of the BID. We judged these impacts at proposal to be reasonable. Based on comments, we revised two algorithms used to estimate the amount of energy required to use add-on controls devices (one that affects the amount of natural gas required and one the amount of electricity required), but did not revise the utility costs (see response in Cost chapter). As we are deleting the above-the-floor requirement for most existing sources, the energy impacts will be substantially less than projected at proposal and we continue to judge these impacts to be reasonable. Unfortunately, we do not have the information to compare increased energy usages with baseline energy usages at those facilities still projected to require add-on controls. However, any percent change in usage by itself is not relevant in setting the final standards.

7.10 Economic Impacts

Comment: One commenter (IV-D-82) believes that requiring pollution control equipment will result in serious economic disruption with little environmental benefit. According to the commenter, their company and other similar large businesses would incur significant costs to install pollution control equipment and since small businesses will not have to incur these additional control costs, the commenter's company will outsource it operations to small business. The commenter believes this will result in an increased production costs and no reduction in HAP emissions. Lastly, the commenter states that outsourcing the production would lead to serious economic disruption and dislocation in the local community where their Decatur facility is located.

Response: The commenter uses open molding processes, which no longer would be required to meet an above-the-floor requirement. The final rule also no longer distinguishes between small and large businesses. Thus, the claimed cause for the commenter's concern over the need to outsource and the serious economic disruption and dislocation no longer exists.

7.11 Pollution Prevention

Comment: Several commenters (IV-D-73; IV-D-58; IV-D-71) requested that EPA consider pollution prevention options instead of requiring 95% control. Commenter IV-D-73 claims that the 95% control requirement for high HAP emitting facilities is too stringent for existing facilities. According to this commenter, facilities subject to this above-the-floor requirement have not choice but to install costly end of pipe control devices, thus eliminating any incentive for research into pollution prevention or process improvements. The commenter recommends that EPA set the level of HAP emission reduction required for existing high-emitting facilities no greater than the level that is achievable using available pollution prevention techniques without add-on control devices and allow these facilities the same amount of time to implement pollution prevention as they would have to install add-on controls (3 years). While it may be statutorily difficult to lower the percentage for new facilities, the commenter states that they would support regulatory language that would encourage pollution prevention over add-on control.

Commenter IV-D-58 proposes a very prescriptive pollution prevention program as an alternative to add-on controls. The commenter believes that such a program would put all manufacturers (except those exempt from Title V) on a level playing field. The program requires the resin manufacturers to design new materials to meet emission reductions, form materials as applied, and encourages equipment manufacturers to develop new spray equipment to improve transfer efficiencies that result in emission reductions.

The commenter suggests that the pollution prevention program be tied to the development of new industry standards for indoor air quality, fire protection, energy utilization, and solid waste reduction. This commenter notes that the old SCAQMD Rule 1162 versus the new Rule 1162, which is currently being developed and sets the reduction levels at 65%, does exactly that. The Rule 1162 encourages the development of alternative materials to be used in the design of products to meet the specifications of the end product. In conjunction with the new Rule 1162, the UEF are being incorporated into the rule as a means of measuring compliance and setting the baseline. The rule is easily measured for compliance. The source has the option to meet the rule with or without thermal oxidation, at each of the spray stations and/or emission source. Method 24 is used to measure capture efficiencies for controlled sources. The SCAQMD rule is then reviewed and amended as needed every few years. The commenter suggested that the MACT standard could follow this format. The final standard should allow continuously operating facilities like Lasco to utilize practical thermal oxidation along with pollution prevention.

The commenter states that the SCAQMD composite rules are clearly working and can be improved upon. These rules have the methodology to meet reduction goals, verify compliance, and improve over time as new materials and techniques are developed. EPA's proposed add-on control mandate would stop further pollution prevention development and could also price the composite industry out of business. This commenter included various examples of specific pollution prevention reductions achieved.

Commenter IV-D-71 maintains that, despite EPA's policy position advocating the worthy goals of pollution prevention, the proposed rule gives short shrift to such practice when compared to its insistence on add-on controls. The commenter refers to its experience at one of their facilities in which they implemented a series of pollution prevention measures that resulted in a reduction of HAP emission by 81% from 1995 baseline emissions.

Commenter IV-D-61 notes that they have achieved remarkable reductions through pollution prevention, referring to their state permit application that estimates emission reductions of 80% through pollution prevention efforts. The commenter claims that they have demonstrated that they can effectively control emissions through pollution prevention technology in a cost effective manner.

Response: As has been noted, the final rule no longer requires the above-the-floor option for most existing facilities. Only a few existing facilities in the centrifugal casting or continuous lamination/continuous casting process groupings would likely be required to install add-on controls to comply with the above-the-floor requirement. Such facilities have the option of meeting an alternative emission limit, which could be met using pollution prevention measures if they are effective enough to be equivalent to add-on controls achieving 95 percent reduction. Therefore, we do not believe additional changes need to be made to the final rule to further encourage pollution prevention techniques.

Comment: Several commenters (IV-D-71; IV-D-54; IV-D-68) expressed concern that the capture-and-control requirements create a disincentive for pollution prevention efforts.

Commenter IV-D-71 states that pollution prevention and add-on controls are contradictory in two ways: (1) add-on controls would impede the continued development of pollution prevention and (2) add-on controls are more expensive to operate with pollution prevention in place. According to the commenter, if EPA mandates add-on controls in the final rule, companies in the industry will have no incentive to continue development of pollution prevention. Historically, the large companies always have been the pioneers in this area, because small companies do not have the resources to develop pollution prevention themselves and do not represent sufficient market potential to make development of pollution prevention attractive to equipment manufacturers and other suppliers who must invest in and eventually recover their R&D costs. In addition, the capital investments required to install add-on controls would be crippling. The high cost to operate the add-on control equipment would reduce or eliminate profits. Assuming the commenter's company survived, there would be no money left to spend on pollution prevention research and development.

Add-on controls also discourage pollution prevention in another way. The materials with higher styrene content and the older spray guns result in two to three times more styrene emissions per pound of material applied when compared to pollution prevention technologies. Ironically, the greater styrene emissions can serve as an inexpensive fuel to operate add-on controls for two reasons - (1) higher styrene content resins are less expensive than newer low content resins (the lower material cost effectively discounts the cost of styrene "fuel") and (2) the older, higher emitting spray gun technologies are more productive and have fewer finish problems than the newer flow coater equipment.

Pollution prevention will achieve significant emission reductions without the adverse cost, environmental (CO_2), and energy impacts of add-on controls and the increased occupational risks to the workers caused by Method 204 enclosures. The commenter states that they have demonstrated at one of their facilities that pollution prevention can be affordable and achieve emission reductions in styrene emissions of 70 to 80% over 1994 baselines. The commenter plans to incorporate similar pollution prevention methods at another of their facilities where they anticipate being able to achieve 70 to 80% emission reductions over 1993 emissions and 35 to 40% over 1997 emissions.

Commenter IV-D-54 strongly advocates replacing the capture-and-control requirements for companies triggering the "above-the-floor" threshold with a pollution prevention requirement. The companies subject to these requirements have the resources to work with suppliers to develop new technology that reduces emissions. The impetus for greater gains in lowering emission will be greatly diminished if EPA requires capture-and-control. If required to use capture-and-control, the larger companies will only use resins that have low enough HAP content to meet OSHA requirements and to protect workers. If these needs can be met with higher HAP resins, they will be used to gain the fuel of HAP in the control process. There will no longer be a demand to develop low HAP products.

Commenter IV-D-68 is concerned that as written the rule would foster the use of HAP-rich product and processes and deter the development of new resin and gel coat pollution prevention technologies that solves the emission problem at the source. The commenter states that if EPA does not recognize pollution prevention as an alternative control option, new technologies may not find a market. The commenter encourages EPA to adopt an alternative pollution prevention control option in lieu of proscribing add-on controls for large fabricators. The commenter states that this option would give fabricators a demonstrated option to avoid thermal oxidation by reducing emissions at their source.

Response: As noted in the previous response, the final rule no longer requires the above-the-floor option for most existing facilities. Only a few existing facilities in the centrifugal casting or continuous lamination/continuous casting process groupings would likely be required to install add-on controls to comply with the above-the-floor requirement. Such facilities have the option of meeting an alternative emission limit, which could be met using pollution prevention measures if they are effective enough to be equivalent to add-on controls achieving 95 percent reduction. We believe that the emission factor alternative provides incentive to encourage the development of pollution prevention techniques at these facilities if the cost of add-on controls is considered too burdensome by the facility.

Comment: One commenter (IV-D-36; IV-D-37) does not see combining pollution prevention and capture-and-control as a cost-effective approach to emission reductions. The commenter states that imposing pollution prevention standards in conjunction with the control system will only make the system (and overall compliance) more expensive.

Another commenter (IV-D-111) states that EPA should accept the 65% reduction that can occur through the use of new and yet to be developed pollution prevention technologies and not establish a more stringent "above-the-floor" MACT. The commenter describes pollution prevention techniques they have used to reduce emissions. The commenter states that pollution prevention efforts would be moot if an oxidizer or other add-on control device were required at their plants for production in excess of 100 tons annually. The commenter states that pollution prevention is the best control for them and other composite manufacturing operations. Pollution prevention is available, effective, and affordable for small composite manufacturers, such as themselves. Pollution prevention will work well with large parts, does not require vast quantities of non-renewable energy resources, and will maintain proper working conditions for their employees under OSHA requirements. Moreover, the commitment of the composites industry to continue the development and use of pollution prevention technologies significantly outweighs any further marginal reductions that might be achievable through add-on controls.

This commenter also noted that coupling pollution prevention with the high airflow and extremely dilute concentrations of styrene in the exhaust streams would be contrary to the efficient operation of an oxidizer. Accordingly, requiring add-on controls would eliminate any further incentive for the commenter to use process technologies that otherwise would result in lower emission of pollutants, lower worker exposures, reduced odor, decreased waste, and generally a more clean and productive work environment.

Response: As previously discussed, the above-the-floor requirements have been removed for most process/product groupings. Therefore, these comments, as they relate to the above-the-floor option are mainly moot. The only process/product groupings that still have above-the-floor requirements that require add-on controls are centrifugal casting and continuous lamination/casting. These two process/product groupings tend to have much higher exhaust concentration than typical open molding processes, so the comments above are not applicable.

Comment: One commenter (IV-D-98) maintains that capture-and-control does not qualify as an above-the-floor technology for existing sources. According to this commenter, pollution prevention is superior to capture-and-control when fairly measured against most, if not all, of the statutory requirements. Specifically, the commenter claims:

– Pollution prevention can achieve short-term emission reductions comparable to those that can be achieved with add-on control, and greater emissions in the long run, in a manner more consistent with national policy than add-on controls. Pollution prevention can do up to 65% while a more realistic capture-and-control can do 76% (80% capture and 95% control).
– Capture-and-control has major non-air quality health and environmental drawbacks, while pollution prevention has major non-air quality health and environmental benefits.
– Capture-and-control would result in far more energy use than pollution prevention.

- The marginal cost of any extra emissions reductions that add-on controls might achieve is entirely unreasonable.
- Regardless of marginal cost, the economic impact on the industry of a capture-and-control requirement is itself unreasonable.

A second commenter (IV-D-107) states that pollution prevention provides for verifiable pollution reduction of a significant nature. According to this commenter, pollution prevention (1) is well received by the industry as a whole and supported as a viable alternative by many small and large businesses; (2) is economically feasible and would not jeopardize the financial viability of small and large businesses as well as truncating any concomitant growth; and (3) can be implemented in manner to meet reasonable and prudent environmental protection criteria while not jeopardizing the financial viability and long term growth of both small and large businesses. On the other hand, the commenter states that capture-and-control (1) is an unverified technology at the 95% level that is proposed; and (2) is universally being rejected by small and large businesses, all of whom cite severe if not terminating implications from its financial impacts. This commenter strongly recommends that the proposal for capture-and-control be replaced with pollution prevention.

Response: As has been noted, the above-the-floor requirement for all existing sources, except for those using centrifugal casting or continuous lamination/continuous casting, has been removed in the final rule. Therefore, for most of the industry, this comment is moot. As it might pertain to centrifugal casting and continuous lamination/continuous casting, the final rule provides an alternative standard in the form of an emission factor. If facilities subject to the above-the-floor requirement can implement pollution prevention measures that reduce emissions to a level equivalent to the 95 percent reduction, then all of the attending benefits identified by the commenter will be realized. If pollution prevention measures can not attain equivalent levels of emission reduction, then facilities will still be required to use add-on controls. In Chapter 7 of the BID, we analyzed the adverse environmental impacts, as required by Section 112(d)(2) of the Act, and determined that these impacts did not warrant changing the above-the-floor standard for the process groups identified.

Comment: One commenter (IV-D-108) agrees that emissions can and should be reduced by manufactures and that a 58.5% reduction is reasonable for continuous lamination sources below the threshold for the above the floor standard. The commenter, however, disagrees with the approach taken by EPA, stating that the proposed data requirements and equations require an add-on control device of some kind and do not allow for other pollution prevention measures. The commenter states that this approach ignores the establishment of a baseline year to work from for emission reduction and the years of effort spent in this endeavor.

Response: We have included in the proposed rule and retain it in the final rule an alternative emission factor to the percent reduction requirement that would allow a facility the option to use pollution prevention measures that achieve a level of control equivalent to the 95 percent reduction. Therefore, we believe the rule provides sufficient flexibility to using add-on controls or pollution prevention measures or a combination of both in achieving compliance with the standard.

8.0 PERMANENT TOTAL ENCLOSURES

8.1 Definition of PTE and Enforcement

Comment: Two commenters (IV-D-78; IV-D-58) are concerned over how PTEs would be defined and how Method 204 would be enforced. Commenter IV-D-78 states that EPA needs to provide a clearly defined description of the permanent total enclosure device so state and local agencies can implement the standard.

Commenter IV-D-58 points out that State and local agencies must implement and enforce the final rule, so state interpretation of the rule will be the true version in actual practice. Therefore, the commenter states that the rule must be clear in order for each state agency to apply the rule fairly and equally. The commenter notes that they attempted to build a new facility in 1999 but gave up the plan when the state mandated a literal interpretation of Method 204 even though the county and EPA Region IX had previously accepted the "smoke puff" method to demonstrate 100% capture.

Response: Method 204, which describes the criteria under which an enclosure qualifies as a permanent total enclosure (PTE), was intentionally written to be flexible in order to accommodate various processes. Any changes we would make to make the method more prescriptive would make it less flexible and possibly more difficult to apply.

The rule does not state that a facility must build a PTE. It states that they must achieve 95 percent capture and control. We believe that the simplest way to achieve 95 percent capture and control is to build a PTE. Permanent total enclosures meeting the requirements of method 204 have been successfully applied in other source categories, including printing and publishing, and various surface coating operations. It should also be noted that printing and publishing and surface coating operations must also deal with similar issues relating to moving materials in and out of the enclosure, and protecting workers from overexposure to toxic materials. The number of facilities with a PTE nationwide is in excess of 250. Method 204 was originally conceived over 10 years ago, so this is not a new method. The criteria are intended to achieve maximum amount of emission capture. So we believe this is a well established method that has been proven in the field.

In addition, under the final rule, only a few existing facilities in the centrifugal casting and continuous lamination/continuous casting process groupings are likely to require permanent total enclosures (PTEs). New sources with over 100 tons per year of emissions are also likely to require PTEs. We believe that there will be many fewer issues associated with Method 204 for total enclosures at centrifugal casting and continuous lamination/ continuous casting facilities and at new facilities (which can more readily plan for PTEs) than existed under the proposed rule for all of the open molding facilities. A facility would need to submit to the permitting authority the design of the PTE showing emission points, air flows, door locations,, and estimated time the doors will be open. It would be up to the permitting authority to approve or disapprove the design. If the design is approved, then it is the responsibility of the facility to build and operate the PTE in accordance with the submitted design. We do not see this as an unreasonable burden, since a new facility will have to do this in any case.

Thus, we do not find that this rule is the appropriate place to further modify Method 204. Therefore, we have not incorporated additional language in this rule pertaining to the implementation and enforcement of Method 204.

8.2 Feasibility to Capture 100% of Emissions

Comment: Many commenters questioned the feasibility of PTEs actually attaining 100% capture at their facilities specifically or in the RPC industry in general. According to Commenter IV-D-78, their experience indicates that 100-percent capture is improbable based on EPA’s methodology. However, one commenter (IV-D-39) is evaluating the PTE requirements and believes that the EPA Method 204 criteria is attainable for their sized product(bathware).

One commenter (IV-D-54) states that EPA should reevaluate the assumption that industry can achieve 100% capture. Method 204 is not always demonstrated in the same fashion among locations performing the test. Customers have had varying degrees of success in demonstrating adequate enclosures to local inspectors. The most frequent difficulty is opening doorways and movement of product in and out of the production area during compliance testing. The commenter suggests that sites rarely achieve 100% capture in practice because doors cannot remain closed during normal production days. The rule should contain adequate flexibility and include a more realistic capture efficiency requirement.

Another commenter (IV-D-94) states that EPA assumes that 100% capture is attainable at all facilities. In old facilities, exterior doors and windows are opened in the summer months (May-October) to cool the employees. Therefore, capture efficiencies are much greater in the winter months, when the windows and doors are closed. It is estimated that capture efficiencies are 90% in the winter months and 50% in the summer months. The average capture efficiency is therefore estimated to be 70%. It is assumed that some efficiencies can be improved through curtains and reducing openings required for cooling during cooler months.

At MFG Union City all resin and gel coat spraying is done in three sided open-end spray booths (first floor reinforcements and miscellaneous parts), or booths with doors at either end (third floor heavy truck parts). Much of the curing of parts takes place between the booths. Tie-ins made of glass mat are wetted out in the spray booth and carried out to the molds in the open room. A building total enclosure and air conditioning would need to be constructed to approach 100% capture. EPA has not considered these capital and operating costs while assuming 100% capture, thereby underestimating cost and overestimating effectiveness.

MFG Texas, though it is a newer facility, would have serious capture constraints that the EPA cost analysis did not consider. Four 10-ton overhead tram rail cranes are required to maneuver and flip the 120-ft. blade mold halves. Large roll-up doors have to be opened to move the blades out of the lamination building and into an adjoining bay for finishing, and then moved outdoors for storage, loading and shipping. In the northern plains of Texas, meeting EPA Method 204 on a total building enclosure would be a matter of which way the wind was blowing the day of the test. Some very expensive modifications would have to be made to the building to approach 100% capture. Two sets of roll up doors (air locks) are not practical on a 120-ft. part.

Another commenter (IV-D-111) states that the 95% requirement should be removed because it would be practically impossible to achieve at Xerxes and Proform, because Method 204 enclosures can not capture 100% of their process emissions from all existing production areas. The commenter then discusses each of the five criteria of Method 204 and how they can not meet any of the criteria.

The commenter also states that using their building as an enclosure would also not achieve 100% capture due to opening doors periodically, building leaks, and fugitive emissions within the building. The required ingress and egress of raw materials, cranes, people, and finished product would violate Method 204 and defeat the 100% capture requirement. The commenter refers to the study done for CFA in which 80% capture was identified as the best that can be achieved. The commenter recommends that the cost analysis be revised to reflect the realistically achievable capture efficiency of 80% and should not assume any feasible capture capabilities for large parts such as Xerxes' tanks and Proform's barge covers.

According to another commenter (IV-D-98), the factual record shows that 100% capture levels are not achieved in the composites industry. EPA's assertion that composites fabricators can achieve 100% capture rests on two example facilities, but closer examination of these facilities does not support EPA's position, and EPA has not shown how the capture achieved by these facilities can be achieved at other facilities while providing for safe workplaces and the necessary movement of molds, products, materials, and workers. CFA does not believe that it is possible to satisfy the requirements for open molding operations (such as movement of molds, products, and materials; protection of workers; accommodation of large products, etc), while really meeting the full criteria of Method 204. Based on Haberlein's study, CFA believes that the maximum practical capture efficiencies range from 73% to 88%. CFA does not believe that either of the two sample facilities indicated by EPA meet 100% capture. EPA has often assumed that building enclosures achieve 100% capture, but this is not the case due to problems with wind loads and building leaks.

Commenter IV-D-98 further states that, for practical reasons, 100% capture is not possible at composites fabrication facilities. Efficient production requires frequent movement of molds, products, workers, and raw materials into and out of the process areas. As a result, doors to process areas are large and are kept open, regardless of product size. Although it may be technically possible to outfit enclosures with air conditioning, or interlocked sets of doors, these approaches would be very expensive and have not been demonstrated in practice. Furthermore, EPA's cost analysis does not reflect the expense of either of these approaches. Aker Plastics in Martinsburg, WV, provides an example of EPA's erroneous assumptions. This facility has a relatively favorable setting for installation of capture and control, and in fact uses preconcentrator and RTO unit identical to the baseline control proposed by EPA, but the facility is only able to capture emissions from the gel coat booths and lamination rooms, perhaps 80% or less of the facility's total emissions.

Commenter (IV-D-98) states that EPA has greatly underestimated the difficulty of compliance with Method 204. The composite industry facilities cannot meet the requirements of Method 204. This method is enforced very flexibly by most states, but that does not mean that 100% capture is in fact achieved. The commenter noted the following conditions that contributed to less than 100% capture: (1) operated with doors open that greatly exceed with allowable size for NDOs, (2) employ air curtains or flexible vinyl curtains, (3) employ inaccurate capture tests using smoke pencils or pressure test across one wall, and/or (4) are building enclosures, the air leaks from which prevent practically achieving 100% capture. While they probably achieve the highest practical capture efficiencies, these enclosures do not meet the technical requirements of Method 204 and do not achieve 100 percent capture. This commenter cites Rob Haberlein's work as providing the most detailed and credible estimate of realistically achievable capture efficiencies and that his work would not support use of an average capture efficiency exceeding 80 percent.

Another commenter (IV-D-51) understands that EPA believes that open molding of composites is similar to spray finishing and improperly assumed that Method 204 total enclosures and stringent add-on controls are feasible for open molding operations. The commenter believes EPA is wrong about the similarity between the two processes. In particular, open molding requires numerous processes and several laminate steps while spray finishing would only need one coating step; the commenter's stair step units require manual processes involving several workers while spray finishing does not require manual steps after coating application; open molding is labor intensive and requires large exhaust flows to limit worker exposure to styrene while spray finishing only needs a single operator who could wear a respirator. Based on these differences, the commenter believes that EPA should not treat open molding as another spray finishing operation and should consider the aspects that make open molding unique as required by the Clean Air Act.

Another commenter (IV-D-50) asserts that EPA has improperly assumed that Method 204 enclosures are practical for open molding based on the belief that open molding lamination processes are similar to spray finishing. The processes in fact have several important and fundamental differences that greatly impact the suitability of enclosures. Open molding requires application of several layers and small parts to the mold while spray finishing is basically one step. Open molding is labor intensive; laminate workers have greater exposure to styrene and require large airflows to limit exposure; open molding requires manual roll-out and the addition of reinforcing materials; and the cure time for open molding is much longer than spray coating. Response: As was noted in the previous response, only a few existing facilities in the centrifugal casting and the continuous lamination/continuous casting process groupings and new facilities emitting over 100 tons per year are expected to install PTEs. For these existing facilities, none of the concerns raised by the commenters over the issue of whether PTEs would actually capture 100 percent of the emissions appear to us to be relevant. The comments focus on open molding and pultrusion operations. Centrifugal casting and continuous lamination/casting operations are more compact operations, and can more easily meet the requirements of EPA Method 204. For new facilities, proper design and operation can insure the requirements of EPA Method 204 are met. For example, in a new facility, the production line layout can be planned to minimize the lamination areas requiring PTE. Doors sizes can be minimized or located away from emission points. Door openings can be enclosed in tunnels, as was done at A.R.E. in Massillon. Therefore, in the revised cost analysis, we continue to project 100 percent capture of emissions for determining the cost effectiveness of the above-the-floor option.

8.3 Ability to Meet Method 204 Criteria

Comment: Several commenters (IV-D-58; IV-D-71; IV-D-98) express concern with regards to the ability to meet specific criteria associated with demonstrating Method 204. Commenter IV-D-58 claims that the geometry criteria, the 200 fpm capture velocity, and the closed doors make PTE impractical for some of their production lines. According to this commenter, major plant modification, requiring shutdown, would be needed to close all openings and these shutdowns would cause additional profit loss to the company.

Commenter IV-D-71 states that there are two critical problems with Method 204 enclosures: (1) minimum average 200 fpm capture velocity through the enclosure openings would require significant increases to the existing exhaust airflows at all three of the commenter’s plants and (2) closed doors - booths cannot have doors and the exterior plant doors cannot be closed in the summer months (heat is already a problem in July and August and closed doors would make it a terrible problem for a longer period). Method 204 is not a problem for P2, which does not require an enclosure to be effective, yet the emission results can be just as effective.

Commenter IV-D-98 maintains that EPA's assumption that composite facilities can meet the stringent requirements of Method 204 is incorrect and that this mistake results in a large distortion of the choice between alternative control levels. This commenter specifically points to the 200 fpm air flow requirement and the NDO requirement limiting NDO area to less than 5 percent of the enclosure's surface area. Based on studies by Engineering Environmental and NuChem, not one of the examined facilities met the facial velocity requirement and most also failed the 5 percent test.

Response: For those existing facilities under the final rule that are likely to require a PTE, we disagree with the commenter's concerns that such PTEs would not be able to meet the requirements of Method 204. As discussed above, for new facilities, proper design and operation can insure the requirements of EPA Method 204 are met. For example, in a new facility, the production line layout can be planned to minimize the lamination areas requiring PTE. Doors sizes can be minimized or located away from emission points. Door openings can be enclosed in tunnels, as was done at A.R.E. in Massillon. It should also be noted that EPA Method 204 is not a new method. It has been used in a variety of industrial settings for over ten years. The primary applications have been surface coating and printing industries. However, all of the issues mentioned by the commenters are present in any situation where EPA Method 204 has been applied. But industry sources have been successfully applying this method. Therefore, we have retained the requirement for PTEs where add-on controls are used to meet an above-the-floor requirement.

8.4 Alternatives to Method 204

Comment: One commenter (IV-D-58) maintains that Method 204 is too stringent to serve as a practical means for measuring capture efficiency. Simple methods are available to verify airflows into process enclosures and buildings, using pressure drop instruments, simple smoke puffs, or hot-wire velometer surveys. These methods are more practical than Method 204. The commenter states that its design of negative airflow into the process area meets the basic intent of 100% capture.

Response: We disagree that Method 204 is too stringent and have not revised the final rule. However, a facility is not limited to meeting the requirements of EPA Method 204. They can perform testing to determine capture using EPA methods 204B through E in Appendix M of 40 CFR part 51, or an alternative test method that meets the requirements in 40 CFR part 51, Appendix M. The alternative test method must meet the data quality objectives and lower confidence limit approaches for alternative capture efficiency protocols requirements contained in 40 CFR part 63 subpart KK, Appendix A.

8.5 Health and Safety Risks

Comment: Many commenters (IV-D-36; IV-D-37; IV-D-58; IV-D-71; IV-D-58; IV-D-50) are concerned that using PTEs would pose various health and safety risks, which the EPA did not take into account. Commenter IV-D-98 states that EPA entirely failed to consider the possible adverse effect of this rule on worker health and safety. EPA's preamble recognizes "the potential for worker exposure in situations where processes have to be controlled to meet the 95 percent control requirement." Although those impacts are clearly relevant both to a "floor" standard and to any projection above-the-floor, EPA's preamble contains no analysis of worker safety issue, but simply requests comment on it.

Commenter IV-D- 36, -37 claims that having to meet the 95% emission reduction requirement would mean creating a work environment that would be more hazardous (exposure to significantly higher styrene concentrations) and more difficult to work in (extensive PPE required, such as supplied air respirators, and a more confined work space in smaller spray booths) for affected fabrication associates. This commenter states that they could not ethically support a rule that would intentionally create a more hazardous work environment. The commenter maintains styrene concentrations below 50 ppm by moving a large quantity of air through their resin application stations.

Commenter IV-D-58 states that their enclosures cause relatively high styrene exposure levels and claims that EPA did not consider this problem when specifying Method 204 enclosures. The commenter requests EPA to carefully review submitted information in the comment letter to verify the relatively high exposure levels inside the existing enclosures. The commenter states that Method 204 enclosures would cause even greater exposure levels, which would be unacceptable to OSHA.

Commenter IV-D-71 claims that EPA ignored how 100% capture PTEs with exhaust concentrations of 100 ppm would greatly increase worker risk of injury due to three major occupational hazards:

1. Occupational exposure to styrene vapor. The commenter states that for all practical purposes the 50 ppm Pel and the 100 ppm STEL are the styrene limits that must be achieved by the industry. The commenter notes that although a federal court overturned OSHA's 50 ppm PEL and 100 ppm STEL (which had been previously 100 and 200 respectively), the industry voluntarily agreed to come into compliance with the lower limits and points out that several state OSHA agencies, including Tennessee, adopted the lower limits and are currently enforcing these limits. The commenter states the EPA has refused to incorporate these lower values in the analysis and continues to use the 100 ppm even though this value is "at odds with EPA's initial assumption and has no factual basis" and that "the only actual data referenced by EPA to support this [value] actually shows that the OSHA PEL would be violated if the average styrene exhaust concentration were 100 ppm or greater."

   The commenter states that EPA has not properly considered how such enclosures would significantly increase worker exposure to styrene. EPA must revise its cost analysis to reflect realistic average exhaust concentrations much lower than 100 ppm. These lower exhaust concentrations correspond to actual employee exposure levels that can meet the OSHA PEL and STEL. At the very least, EPA should honor its initial approach and use a 50 ppm average styrene exhaust air flow concentration. This correction alone would effectively double the assumed exhaust air flow from the proposed enclosures.

2. Heat stress and strain. Heat stress management is a serious and continuing problem at two of the commenters plants. The commenter identifies various steps they use to reduce the impact of heat stress on their employees.

EPA must consider the effect of climate on the heat stress and strain to workers forced to labor inside Method 204 enclosures during the summertime. Many parts of the US cannot close their plant doors and seal up their workers inside booths without the real threat of worker injury.

3. Physical Injury. Placing workers inside small tight enclosures would increase the risk of slip and fall and pinch type physical injuries. The risk of these injuries would be magnified at the commenter's plants due to the presence of automated overhead conveyor systems that move large molds around the production lines at significant speeds. At present, the commenter limits the risk by providing spacious "protection zones" around most of the moving production lines. Further, the tight enclosures would restrict worker egress in the case of an emergency evacuation.

EPA must consider the increased risk of physical injury on workers forced to labor inside Method 204 enclosures. Closing the plant doors and sealing up the workers inside booths would increase the real threat of worker injury.

Commenter IV-D-58 states that the enclosures at their plant result in hot temperatures in the work spaces and greater heat stress on the employees and that EPA ignored this problem when specifying Method 204 total enclosures.

Commenter IV-D-98 states that any attempt to capture 100% of emissions would unacceptably limit production and/or defeat some or all of worker protections and lead to excessive styrene exposure levels, heat stress, fire hazards, or danger of workplace accidents. CFA notes that (1) OSHA rules require the use of enclosure and ventilation to protect workers and allow other compliance methods such as respirators only when ventilation control is not feasible, (2) a study by NuChem found that if air flows were reduced and/or emissions capture efficiencies increased, worker exposure to HAP vapors, heat stress, and other risks would be increased to an unacceptable level, and (3) noted increasing the exhaust concentration to 100 ppm at the Aker facility would certainly cause worker overexposure to styrene.

Commenter IV-D-50 states that employee exposure is not considered by EPA. The EPA's proposal would essentially make the plant one giant spray booth with unacceptable levels of employee exposure to styrene. Finally, the requirement to close exterior doors can cause heat stress in some climates.

Response: The use of PTE for capture of HAP emissions should not result in increased worker exposure to contaminants or heat stress if appropriate precautions are taken. As previously noted, one solution is to design the spray enclosures based on meeting worker exposure requirements, and then enclosing the entire lamination area in a PTE. The facilities that form the basis of our new source floor that are currently using PTE on are in compliance with OSHA exposure regulations. Experience in the printing and publishing industry shows that use of PTE, in many cases, results in reduced worker exposure to both contaminants and heat stress. In high heat and humidity areas, it is likely that some type of air cooling will be required during summer. However, this issue is present even without the requirement for capture and control.

Comment: One commenter (IV-D-111) states that OSHA does not recommend respiratory protection as the first line of worker protection and has advised that feasible engineering controls must be utilized before an employer resorts to respiratory protection. The commenter therefore concludes that EPA is not in a position to suggest that air flows be reduced, and that the commenter put their workers in respirators in an effort to concentrate emissions within the mold.

Response: PTEs likely to be used for centrifugal casting and continuous lamination/ continuous casting operations would not put employees inside the enclosures. For new sources, proper planning should address all concerns, as the successful demonstration of PTE at facilities in this source category demonstrates. Therefore, we do not believe there are any OSHA issues that need to be addressed and have not revised the final rule with regards to PTEs.

8.6 Applicability to Large Parts

Comment: Several commenters (IV-D-82; IV-D-111; IV-D-98; IV-D-59) question the basis that EPA used to determine the feasibility of PTEs in the industry, with several commenters specifically questioning the feasibility of PTEs for large parts, such as barge covers.

Commenter IV-D-82 states that the proposal is inconsistent and inequitable. EPA concluded that 100% capture can be applied to large parts based on identification of coating facilities achieving 100% capture. Coating operations are very different from manufacturing composite products. EPA's conclusion is based on a dissimilar process and is not defensible. The commenter recommends using the Boat NESHAP as a similar operation for the basis of the composites NESHAP. These are similar operations. EPA concluded that capture of emissions from boat manufacturing posed an unreasonably high cost. The same should apply to a similar industry.

Commenter IV-D-111 describes in detail the operations used to produce large parts (underground storage tanks, barge covers) and describes operating conditions (e.g., airflows) that would make total enclosures around the operations impractical and unsafe (e.g., workers placed in a confined space with rotating molds). The commenter concludes that the only possible alternative would be to make the entire building into a Method 204-compliant building enclosure. The commenter states that for the very large parts they are producing EPA's total enclosure assumptions are not appropriate. The commenter describes their products and the size enclosures that would be required and for some parts states that only building enclosures would be of sufficient size to contain the operations required to construct those parts. The commenter states that moveable, partial enclosures, as used on a ship hull, are infeasible in their situation because the entire mold is involved in the fabrication process at one time, creating emissions from across the entire mold surface during lamination. Moreover, the commenter has multiple molding stations to produce many units per day; the logistics of moving molds and constructing parts within a moveable partial enclosure is simply not practical. The only practical alternative is to make the production building into building enclosures, which still would not achieve 100% capture due to the required periodic opening of large exterior doors at the plants.

Commenter IV-D-98 states that EPA recognizes that facilities that make large parts will have a more difficult time achieving 100% capture than facilities making small parts, but the agency determined that 100% capture for facilities making large parts is technically feasible. This determination is based on facilities achieving 100% capture of coating operations on large parts, as illustrated in a technical paper based on theoretical studies with little data from actual experience. CFA reviewed this paper and found a number of significant differences between coating planes and ships and open molding of composite projects as follows:

– coating operations require one or two people inside the enclosure, while molding of large composites may require crews of six to ten workers;

– the physical movement required in composite fabrication is much more complicated than using a spray gun to apply coating to a surface and requires multiple steps involving physical contacts with the entire surface area;

– the large ship example uses an enclosure to encapsulate a portion of the ship and the enclosure moves to the portion of that is being coated; this approach cannot be used for composite fabrication because the gel coat or laminate must be applied on a continuous basis to provide structural integrity and appearance;

– ships, aircraft, and helicopters are produced one unit per number of days; composite production demands many units per day, thus the need to move material works against isolating the work space

– a typically large composite facility would require multiple enclosures to sustain production or the entire facility would have to meet the definition of a total enclosure,, creating far greater expense per unit of production value than for a ship or aircraft coating operation;

– helicopter maintenance coating uses up to 2 gallons of coating per hour. A typical gel coat application for large composite parts may be 24 to 48 gallons per hour and laminating resin application may range from 53 to 133 gallons per hour. The higher material usage requires much higher air flows and makes capture more difficult and control more expensive

– the technical paper reported the dry-dock total enclosure concentration increased to 300 ppm, which would result in an immediate OSHA violation in the composites industry.

Commenter IV-D-59 states that retrofitting existing facilities to achieve 100% capture may be technically feasible, but to do so is not cost effective. The commenter refers to data already presented by CFA (Haberlein report). According to the commenter, the parts they make are too large to be made in an enclosed booth and the entire building would have to be made a PTE. The commenter states that they do not dispute the technical feasibility of turning an entire building into a PTE, but does dispute the EPA's conclusion with respect to economic feasibility. The commenter believes that only a few reinforced plastics composites sources are designed such that it may be cost-effective to install a PTE and control. Finally, the commenter states that for large-size part manufacturers such as themselves (and just as with boat manufacturers) it is not economically feasible to comply with the proposed rule primarily due to the cost of retrofitting an entire building to be a PTE.

Response: For existing sources, the issue of large parts no longer exists as PTEs would be applied to centrifugal casting and to continuous lamination/continuous casting products, which are not characteristic of the "large" parts identified by the commenters.

For new sources, we reviewed the available data on facilities that have sucessfully used permanent total enclosures in this industry. Based on that review, we have concluded that there are differeces in the applicability of permanent total enclosures to facilities making large parts. This decision resultes in changes in the new source floors, amd is discusses further in section 21.0

9.0 ABOVE-THE-FLOOR COSTING

Many commenters stated that the costs of capture and control were underestimated and should be reconsidered. Several commenters (IV-D-94, IV-D-58) provided their own estimates of costs of control for their facilities. For example, one commenter (IV-D-94) noted that, in the proposal preamble, the EPA estimates the incremental cost of requiring 95% capture and control for all the industry at $4,300 per ton of HAP removed. This commenter conducted cost estimates for their Union City facility using OAQPS methodology and actual plant data and, using actual plant information, estimated their cost to be $17,000 per ton, meaning that the EPA underestimated their cost by 4 times. Most comments focused on the costing inputs used: (1) hours of operation, (2) exhaust concentrations, (3) exhaust flow rates, (4) size of permanent total enclosures, (5) the number of PTEs, (6) utility costs, and (7) life of PTEs. Other cost comments received concerned the cost of monitoring concentrator performance, site specific factors for retrofitting control devices, the presence of existing control devices, and non-styrenated resins.

One commenter (IV-D-98) stated that if the EPA used a more representative 2,000 operating hours and 50 ppm concentration, costs would be six times higher. Another commenter (IV-D-54) requested that EPA re-evaluate the assumptions used in reviewing capture and control and make a strong effort to consider the diversity of the industry while doing so. Another commenter (IV-D-81) stated that they had performed a BACT analysis in 1997 and determined that only oxidation could meet 95% control. Their analysis used spreadsheets developed by OAQPS and estimated costs of controlling styrene emissions to be more than $26,000/ton, based on 50 ppm styrene. This estimate also assumed operation at 100% of permitted levels. Another commenter (IV-D-61) provided information from an independent study that show the costs for control for its facility would approach $4 million and stated that the total control costs for their operations are 5 to 10 times higher than EPA estimated for other fabricators with smaller parts or higher production rates. These comments are addressed individually below.

9.1 Hours of Operation

Comment: Commenter IV-D-98 states that EPA overestimated the hours of operation at many plants when it assumed that plants operate 6,000 hours. According to the commenter, most facilities operate one shift per day, or about 2,000 hours per year.

Commenter IV-D-82 asserts that the assumption that large businesses operate 6,000 hours per year is not supported by documentation. The commenter has never operated more than 2 shifts (4,000 hours) and currently operates approximately 3,000 hours. EPA's unsupported assumption on operating hours significantly underestimates the true cost of control equipment.

Commenter IV-D-71 notes that a system of capture and control must be sized to handle the peak production level, which corresponds to the permitted maximum emission rate, but some of their plants actually operate at less than their peak permitted production level. EPA assumes that all composites plants operate three shifts per day at full production capacity. This assumption greatly affects estimates for capital and operating costs of add-on controls, and the assumption is not always accurate. For the commenters plants, operating hours are less than peak and thus EPA's cost estimates for these plants and lines are under-stated. According to the commenter, peak versus actual operation is not a problem for P2, which is equally effective for one work shift or three work shifts and for all operating levels in between.

Commenter IV-D-71 also states that the hours of operation assumption of 6000 per year is accurate for gel coat lines at two of the commenters facilities, but not for their third facility and part of a second. The overestimate of hours of operation would under estimate capital and annual costs of control.

Commenter IV-D-111 states that the assumed hours of operation are not realistic and underestimates the actual costs of capture and control at their plants. The commenter provides hours of operation for their facilities.

Commenter IV-D-51 believes that EPA has greatly underestimated the actual cost of add-on controls in part because EPA assumed that all composites plants operate three work shifts per day for 6,000 hours per year. The commenter operates only one shift and cannot envision working more than two shifts. EPA should adjust the cost assumptions accordingly.

Commenter IV-D-81 states that the assumption of three-shifts is also invalid. The commenter has one facility that operates 3 shifts on one line only; the other facilities have varied operation depending on customer demand but typically operate 2 shifts per day, five days per week.

Commenter IV-D-50 states that EPA assumes all open molding plants operate three work shifts per day for 6,000 hours/year. The commenter operates one, two, or three shifts depending on the work orders. In 2000, they operated two work shifts with some overtime for a total of 4,160 hours per year.

Response: As a result of these comments, we revisited the assumptions about hours of operation. Several facilities provided actual hours of operation in their comment letter. In addition, we conducted a survey with the help of CFA of many of the larger facilities that would be most likely to be impacted by any capture and control requirements incorporated in the final rule. We incorporated the facility-specific data obtained from the comment letters and the survey into the cost analysis. For many facilities, this meant that the hours of operation were reduced to approximately 2000 hours per year, but for other facilities the hours of operation remained at approximately 6000 hours per year. For those open molding facilities for which facility-specific data were not available, we used an estimate of 2000 hours in the revised costing. Most of these facilities are small production facilities (based on resin usage) and the hours of operation that best characterize them is 2000 hours per year.

The revised estimate for hours of operation, in combination with revisions to other assumptions, resulted in an increase in the estimated cost of add-on controls. Based on the revised cost analysis, we found that the proposed above-the-floor requirement for existing sources was not cost-effective, with the exception of the centrifugal casting and continuous lamination/continuous casting process groups.

9.2 Exhaust Concentrations

Comment: Commenter IV-D-76 states that it is not clear if the average estimated inlet concentration of 100 ppmv used in the cost estimates is based on carbon (C1) or as styrene (C8H8).

Commenter IV-D-98 states that EPA failed to document its claim that concentration levels in the exhaust from composites fabricators are high enough to make capture and control easy and cost effective. EPA acknowledges that the performance and cost of add-on controls is mainly a function of air flows and HAP concentrations. EPA indicates that no data suggests that the air flows and HAP concentrations in the open molding industry are not adequately represented by the two example facilities on which the proposed standard is based, but the agency never describes the air flows and HAP concentrations at these facilities. The data on these facilities are incomplete, but it is clear that the basic nature of these two facilities is different from most other facilities that would be required to install capture and control. It is EPA's responsibility to affirmatively document the representative nature of the facilities on which it relies. EPA relies primarily on concentrations calculated from permit limits rather than actual data, and EPA claims that the facilities in the RTI Table have an average exhaust concentration of 100 ppm when in fact the average is less than 50 ppm. CFA provided EPA with detailed information on air flows and concentrations for several facilities, but the proposed rule did not correct the errors. In summary, EPA failed (1) to document how the concentration levels at the two example facilities are similar to those of other composite facilities and (2) to show that the concentration levels at composite facilities are similar to the 100 ppm assumption.

Commenter IV-D-98 also states that one major reason for the difference between industry's cost calculations and EPA's estimates is the difference in assumed process exhaust concentrations. EPA's assumption of 100 ppm is contradicted by facts gathered by CFA and by the basic conditions of composites manufacture. For the processes that would have to be controlled under the proposed rule, the estimated exhaust concentrations range from 8 ppm to 84 ppm, with only two facilities having concentrations greater than 50 ppm (Haberlein study). Another study (NuChem) finds worker exposure ranged from 22 to 36 ppm, with exhaust concentrations from 8.4 to 70 ppm. These low concentrations are due to the OSHA requirement limiting exposure to styrene to 50 ppm. The average exhaust concentration could be higher than that if respirators were used, but OSHA allows the use of respirators only when it is not feasible to use ventilation or other engineering controls. CFA also notes that the average concentration in the exhaust stream at the Aker plant is 45 ppm during a typical 8-hour shift, not 100 ppm.

Commenter IV-D-94 states that the EPA cost analysis assumes that all industry exhaust systems have outlet concentrations of at least 100 ppm. According to this commenter, this is much higher than concentrations estimated from plant emissions and exhaust airflows. Their Union City, North Carolina and Texas facilities all have estimated average exhaust concentrations of less than 30 ppm. Existing facilities typically use dilution ventilation to protect employees from excessive styrene exposure. Emissions are based on material use, UEF, and exhaust airflow. MFG Texas has state of the art directed air flow system, but because of the size of the parts (125-ft. Wind turbine blades) and reinforcements, and the size of lamination and cure areas the exhaust concentrations are still below 30 ppm. Our ventilation system supplier guaranteed 8-hour employee exposures below 50 ppm. Cost estimates for any of the MFG systems would have to include a pre-concentrator, as would most composites manufacturing facilities. EPA failed to consider these capital and operating costs. This commenter also noted that they have joined the Industry/OSHA voluntary agreement to limit employee exposures to less than 50 ppm (8 hour TWA). California and North Carolina have state OSHA jurisdictions and enforceable regulatory limits of 50 ppm. Air flow sufficient to maintain employee exposure safely below 50-ppm can result in exhaust concentrations below 30 ppm. MFG Union City has entered into a consent agreement with OSHA to reduce styrene exposure in the gel coat booth to below 100-ppm (8-hour TWA), using engineering controls (before adding respiratory protection). To intentionally increase styrene concentration in the booth to above 100-ppm would be a serious violation of this agreement. I am sure that the EPA understands that MFG is unable to consider this as an option.

Commenter IV-D-111 states that the assumed concentration is not realistic and underestimates the actual costs of capture and control at their plants. The commenter provides exhaust concentrations for their facilities.

Commenter IV-D-71 states that EPA assumed exhaust concentrations would be much higher than the actual exhaust concentrations and provided concentrations for their facilities and compared them to those calculated by EPA. This commenter stated the assumed exhaust concentration of 100 ppm is unrealistic and unsupported – actual exhaust concentrations at the commenter's facilities range from 21 to 47 ppm for maximum permitted styrene emission rates and from 21 to 42 ppm for the actual year 2000 styrene emission rates.

Commenter IV-D-51 feels that EPA has greatly underestimated the actual cost of add-on controls for in part because EPA assumed that the average exhaust is 100 ppm. This assumption is too high and would likely result in employee over exposures to styrene. EPA should adjust its cost assumptions to include a maximum concentration of 50 ppm or less.

Commenter IV-D-81 states that their test results from 1992 through 2001 show an average styrene concentration of 12.46 ppm, rather than the 100 ppm EPA assumed.

Commenter IV-D-50 states that the actual styrene concentrations at the their plants were several times smaller than the 100 ppm, the average exhaust concentration used by EPA. Further, the maximum average styrene exhaust concentrations are also several times smaller than EPA's 100 ppm assumption.

Commenter IV-D-61 states that their data shows VOC concentrations in stack exhaust to be considerably less than EPA estimated.

Response: Based on these comments, we re-examined the basis of the 100 ppm concentration used in the proposal cost analysis. This review indicated that the data on which we based our 100 ppm assumption were actually estimates, and in at least one case, were in error. Based on this finding and based on the comments received, we used a "target" maximum exhaust concentration of 50 ppm (as styrene) in the revised cost analysis. This target concentration matches the voluntary worker exposure limit that many facilities have committed not to exceed. We note that this is a "target" maximum concentration. In the design of the enclosures and the estimation of flow rates to the control device, the actual concentrations to the control device that were costed were less than 50 ppm, most frequently between 35 and 45 ppm. The revised estimate for the exhaust concentrations, in combination with revisions to other assumptions, resulted in an increase in the estimated cost of add-on controls. Based on the revised cost analysis, we found that the proposed above-the-floor requirement for existing sources was not cost-effective, with the exception of the centrifugal casting and continuous lamination/continuous casting process groups.

9.3 Exhaust Flow Rates

Comment: Commenter IV-D-111 states that the assumed exhaust flows are not realistic and underestimates the actual costs of capture and control at their plants. The commenter provides exhaust flows for their facilities.

Commenter IV-D-71 states that the exhaust flow rates for their facilities appear to be much larger than those calculated by EPA and provided flow rates for their facilities and compared them to those calculated by EPA.

Commenter IV-D-50 states that the amount of exhaust airflow needed to limit styrene exposure and provide worker comfort at their plants is many times greater than EPA's theoretical exhaust airflow assumed by EPA.

Response: The calculated flow rates in the cost analysis are dependent on several factors, including the target concentration in the air flow and the hours of operation. As the target concentration was decreased from 100 ppm to 50 ppm and as the hours of operation for many facilities decreased from 6000 to 2000 hours per year, as noted in the responses to the two previous comments, the calculated air flow rates to the control devices increased significantly in the revised cost analysis. Thus, these two changes address the concern raised here by the commenters.

9.4 Size, Number, and Life of PTEs

Comment: Several commenters (IV-D-71; IV-D-94; IV-D-50; IV-D-98; IV-D-111) are concerned over the sizing of PTEs in EPA's cost estimates.

Commenter IV-D-71 states that the above the floor add on control requirement assumes that all lamination activities at a composite plant could take place inside a Method 204 enclosure. The commenter notes that the method used by EPA to determine the dimensions of such enclosures failed to address three important factors that would affect enclosure size:

Part size - some companies produce parts that will not fit inside the prescribed EPA enclosures

Production throughput - sufficient enclosed workspace to complete all production processes at peak production

Worker and part access - sufficient workspace to move the molds, workers, and parts, and to store or stage the many small parts and reinforcements that are added to the molds.

The commenter provides their estimates of the required enclosures at their three facilities and point out that the EPA estimated enclosures for one of their facilities (as an example) for three operations are 61%, 67%, and 10% of the required volume, while those at their two other plants are even further off (i.e., further undersized).

The commenter then concludes by pointing out that the size of the part or the enclosure is not a problem for P2, which works on all part sizes and in all types of enclosures.

Commenter IV-D-94 states that the EPA cost analysis assumes one size total permanent enclosure and does not consider the diverse product sizes, shapes, and processes. The commenter points out that at their Union City facility process areas are frequently modified and moved around to accommodate various product sizes and shapes. Although the third floor has recently been adapted to accommodate heavy truck parts, the heavy truck market has taken a severe downturn, and the facility is looking at alternative products that may be much larger or smaller than heavy truck parts. Production will then shift to the first floor open booth areas where larger parts can be handled. In the past MFG Union City has produced architectural products, concrete form columns, and other large custom parts. For example, MFG Union City built the giant Coca-Cola bottle assembled in New York City Times Square, Trump Towers Taj Mahjal, and huge icons for Disney in Orlando. The wind turbine blade process discussed in the prior section is another good example of part and enclosure considerations that were not appropriately addressed to warrant an above the floor requirement.

Commenter IV-D-50 claims that Method 204-type total enclosures are infeasible and impractical. According to the commenter, the required enclosure size would be much larger than EPA assumed because it must include application, lay-out, roll-out, and curing. The commenter states that EPA appears to have only included the applications and perhaps some roll-out steps and that PTE sizes assumed by EPA are too small to enclose the gel coat and lamination operations.

Commenter IV-D-98 states that EPA's cost analysis assumed that the necessary size of an enclosure would depend on the amount of resin used annually and that, for many facilities, this assumption projects an enclosure smaller than the parts it would contain. This commenter also stated that EPA did not consider the size of the part when establishing the enclosure dimensions leading to smaller PTEs than would otherwise be needed. The commenter also stated that EPA did not consider production throughput as a limiting factor in the selection of an enclosure leading to smaller PTEs than otherwise would be needed.

Commenter IV-D-111 states that EPA incorrectly assumes that the total enclosures at their plants would be installed inside the production buildings and would consist of small “modular” spray booths. This assumption does not fit the commenter’s plants due to the large size of their parts. The commenter states that the entire building would need to be made a building enclosure with a custom cross-flow ventilation design that can cost more than $200,000. Ductwork for a large plant, especially retrofitted ductwork, can cost more than $100,000.

Response: During the development of the proposed standards and from the public comment letters, we obtained facility-specific PTE size data for a number of facilities and compared that data against the PTE sizes predicted by the algorithms in the costing calculation. While we recognize that the size of an enclosure is dependent on factors in addition to resin throughput, we found that, on average, the sizes estimated by the algorithms are very close to the specific sizes indicated by facilities. Consequently, we elected not to change the PTE sizing algorithms in the revised cost analysis. However, based on comments received, we did change the expected life for PTE from 30 years to 10 years. The revised PTE life expectancy, in combination with revisions to other assumptions, resulted in an increase in the estimated cost of add-on controls. Based on the revised cost analysis, we found that the proposed above-the-floor requirement for existing sources was not cost-effective, with the exception of the centrifugal casting and continuous lamination/continuous casting process groups.

Comment: Commenter IV-D-98 states that EPA assumed that only one enclosure would be needed at each plant, ignoring the potential need for use of several enclosures when production levels are too high or the process is too complex to be contained in a single enclosure.

Response: We did not assume that only a single enclosure would be at each plant. We assumed a single enclosure for each process operation at a plant. Thus, if a plant used gel coating and open molding, two PTEs were assumed. We recognize that the number of enclosures may vary for similar facilities depending on the layout of each plant; however, obtaining such information and incorporating into the cost calculations would be nearly impossible. In spite of the limitations on estimating the number of required enclosures, we found, as noted in the response to the previous comment, that the total volume of enclosure required was estimated to be very close to those reported by various commenters and that the total volume of PTEs is much more important to the total cost of capture-and-control than is the actual number of PTEs. For these reasons, we did not revise the algorithms used to calculate the number of PTEs in the revised cost analysis.

Comment: Commenter IV-D-98 states that EPA relied on essentially arbitrary assumptions about the useful life of enclosures. According to this commenter, industry experience shows the useful life of PTEs to be at best an average of 10 years, not the 30 years used in the EPA's costing.

Commenter IV-D-71 states that, while they agree with the 7% interest rate and the 10-year life for control equipment, they disagree with the 30 year life for plant enclosures, stating that most seldom last even ten years before being scrapped or replaced.

Response: We agree with the commenters that the 30 year life expectancy originally used might not be realistic. We discussed the expected life of PTEs with two consultants familiar with industrial PTEs and agree that a more realistic life expectancy is 10 years. Therefore, we have adjusted the cost calculations to reflect a 10 year life for PTEs in the revised cost analysis.

9.5 Utility Costs

Comment: Commenter IV-D-98 states that EPA relied on essentially arbitrary assumptions about the cost of electricity and natural gas. This commenter stated that EPA underestimated the cost of electricity at many plants with an assumption of $0.0448/kWh. A poll of 18 facilities found the average electricity price to be $0.067/kWh. In addition, this commenter stated that EPA underestimated the cost of supplemental fuel at most plants with an average natural gas cost of $3.24/MCF. The poll of 18 facilities showed an average price of $6.07/MCF.

Commenter IV-D-71 states that the utility cost assumptions are unrealistic for relatively small composite plants. The commenter notes that the electricity rate used by EPA was $0.0448 per kWh, actual electricity rates at their three plants were $0.057, $0.044, and $0.055 per kWh. The commenter also noted that the natural gas rate used by EPA was $3.24 per MCF, the actual 2000 natural gas rates for their three plants were $5.38 per MCF, $7.23 MCF, and $5.90 per MCF.

Commenter IV-D-111 states that the utility costs assumed by EPA are unrealistically small for a composite plants. The average rate used includes some very large facilities. As a result, the average is not representative for the composites industry. According to the commenter, compared to all US industrial facilities, a typical reinforced plastic composite plant uses a relatively small amount of electricity, so the unit price is higher than the average US industrial rate. The commenter is similarly concerned about the rate used for natural gas. The commenter provides a table showing actual rates incurred at their plants in the year 2000. The electricity rate shown is about 150% higher than the rate used by EPA and the natural gas rate is about 3 times higher.

Commenter IV-D-94 states that the EPA cost analysis assumes an average cost of electricity of \$0.0448/kWh. The actual price for electricity at MFG Union City in 2001 is \$0.086/kWh, which is nearly double the EPA assumption. In addition, the EPA cost analysis also assumes an average price for natural gas of \$3.24/MCF. The actual cost of natural gas at MFG Union City in 2001 is \$7.64/MCF, which is more than twice the EPA assumption.

Response: In our cost analysis for proposal, we used a national average electricity rate of \$0.0448 per kilowatt hour and a national average natural gas cost of \$3.24 per 1,000 scfm. The electricity rate came from costs reported by the Department of Energy for the industrial seven month cost average from January through July 1998, which is appropriate for the time period used for other costing assumptions. The natural gas cost is also based on reports by the Department of Energy. In this case, a six month industrial cost average from January through June 1998 was used.

We recognize that any one facility's utility costs can and will vary from a national average. However, in preparing a national rule, we relied on national average utility costs. We believe that this is appropriate and we did not change the utility costs in the revised cost analysis for the final rule.

9.6 Concentrator Monitoring

Comment: Commenter IV-D-98 states that EPA did not consider the cost of monitoring concentrator performance and failed to prescribe a monitoring method.

Response: As indicated §63.5855 in the initial proposal, facilities must follow the procedures in 40 CFR Part 63, Subpart SS, including the monitoring and operating requirements for add-on control devices. The requirements do not mandate the use of an continuous emissions monitor. We also reviewed the information on those facilities using add-on control devices with carbon adsorbers within the reinforced plastic composites industry and have found none that are using continuous emissions monitors. Therefore, we do not believe this rule will require facilities to use continuous emission monitors and have not included the cost of such devices in our cost analysis. We believe that the costs of required monitoring were adequately addressed in the original cost analysis and did not change the monitoring cost calculations.

9.7 Site-Specific Retrofit Factors

Comment: Commenter IV-D-98 states that a significant number of facilities would be prevented from complying with the proposed requirements, or could only comply at great expense, because of site-specific factors such as insufficient space on-site, complex process layouts including conveyors, zoning restrictions or lease conditions, lack of pipe-line access to natural gas, and limited power supplies. EPA's analysis does not mention any of these factors.

Commenter IV-D-94 states that EPA did not consider all the additional costs involved in retrofitting old facilities and multiple buildings. The commenter noted that at their Union City facility molding and mixing are conducted on multiple floors and in two buildings separated by a public street. Process areas are frequently modified and moved around to accommodate products that vary considerably in size and shape. These factors make a central control system more difficult to design. There is not enough space on the open molding side of the street for a large rotary concentrator and thermal oxidizer. Therefore it would have to be located west of the closed molding building. These scattered sources would require significant complex ductwork to connect them to an oxidizer. The EPA did not consider these costs in their analysis.

Response: We acknowledge that installing control devices at existing facilities will involve retrofitting costs that will vary widely depending on the layout of individual facilities. Unfortunately sufficient data are not available to accurately incorporate retrofitting costs into the analysis. As a result of updates in other areas of the cost analysis, add-on controls have been determined not to be cost effective for existing open molding facilities, so these facilities will not be required to retrofit for control devices. New sources will not face retrofitting costs as their facilities can be designed with capture and control in the original facility designs.

Comment: One commenter (IV-D-75) is concerned about the affordability and technical feasibility of existing sources achieving 95% control with add-on controls due to low concentration of HAP in the air flow and potentially large building areas needing to be controlled (pultrusion sources manufacturing large parts, for example). The commenter states that, if EPA set the floor by considering new sources that incorporated add-on controls into the design, the analysis does not take into account the necessity of retrofitting existing sources that were built long before add-on controls were required in permitting decisions. The commenter requests that EPA establish a MACT floor for existing sources that takes into account the different types of products manufactured, the many different building configurations, and the age of the source.

Response: Based on the revised cost analysis, we found that the above-the-floor requirement of 95 percent capture and control is not cost effective and will not be required for existing open molders. With regards to the commenter's concern that we may have set the MACT floor for existing facilities based on new sources that incorporated add-on controls into the design, we point out that as proposed the 95 percent control requirement was an above-the-floor requirement for certain existing sources. The MACT floor for existing sources within each process grouping was established in accordance with the requirements of the Clean Air Act based on the actual performance of similar existing sources, including those with and without add-on control devices.

9.8 Presence of Existing Control Devices

Comment: Commenter IV-D-61 states that they believe the approach of looking at a cost analysis for a facility that already has a control device is ludicrous. Logic would tell us that if this company installed a control device, the costs probably represent the lower or more ideal scenario rather than the average or especially the worse case scenario.

Commenter IV-D-58 states that, under the current above the floor proposal, all of the existing partial capture and control systems at Lasco facilities would have to be dismantled, redesigned, and reinstalled to meet the 95% control requirement. The commenter noted that each individual facility must compute their total emission rate before any existing control when determining if the threshold for the above-the-floor 95% capture-and-control requirement would be exceeded, triggering the requirement. Based on this, all of the commenter's plants, including those with an existing RTO unit, must be completely redesigned and rebuilt. Further, the redesign would have to incorporate airflows changes to meet the OSHA standards, requiring exhaust air flow rates of 120,000 cfm. The existing RTO units from 18,000 to 30,000 cfm would need to be replaced with larger more efficient units as well as provide ground space to install the new larger units. The plant make-up air systems would also need to be balanced to match the exhaust system for process control. Three of the five plants are controlled to maintain compliance at below 100 tpy of emissions. The other two plants are controlled to maintain compliance at below 250 tpy. These plants also have implemented pollution prevention equipment and practices. The additional cost per ton of HAP reduced from current permitted levels will be very expensive. (Note: the commenter included a plant-specific details in the letter)

Response: Based on these comments, we revisited the costing calculations for existing facilities with add-on control devices already in place. The cost model was changed such that if a facility currently has a control device achieving less than 95% efficiency, a new control device was costed in the same manner as facilities without existing controls but the estimated annual operating costs for the existing control device were subtracted from the total costs for the new control device. For facilities with add-on controls achieving 95% capture and control, a new control device was costed and sized to handle the processes that are not currently controlled by the existing control device. Based on these and additional changes, we determined that add-on controls as an above-the-floor option are not cost effective for existing open molding facilities and we removed the requirement from the final rule.

9.9 Non-Styrenated Resins

Comment: Commenter IV-D-81 states that they use both non-styrenated and styrenated resins. It would not be economically feasible to segregate the emission streams. This would result in controlling a dilute waste stream, thus increasing costs.

Response: We acknowledge that control costs might be higher in this particular case where both styrenated and non-styrenated resins are used in the same process streams; however, we do not believe that this type of operation is typical of the industry. The cost analysis looks at the average costs incurred based on the best available data with conclusions drawn for the industry as a whole.

9.10 Type of Oxidizer

Comment: Commenter IV-D-76 states that the type of thermal oxidizer assumed in the cost analysis is also unclear.

Response: As indicated in the Background Information Document (Volume I), we assumed that all facilities would use a combined rotary concentrator and thermal oxidation system. The cost analysis is based on this type of device.

9.11 Maximum vs. Actual Operating Conditions

Comment: Commenter IV-D-50 states that the proposed rule does not consider the differences between maximum permitted operation and actual operation. The capture and control system envisioned by EPA must be designed to handle the maximum production level of the plant, but the system will actually operate at much less than maximum most of the time. The focus on actual emission levels does not properly consider the size of the enclosures and control devices that are needed to handle the maximum production level. As an example, in the year 2000, one of the commenter's plants operated at 43% of potential to emit and a second plant operated at 24% of potential to emit.

Response: As noted in a response to an previous comment, we revised the costing calculations so that the hours of operation reflect facility-specific hours or an assumption of 2000 hours per year is used where facility specific data are unavailable. This estimate is roughly equivalent to one shift per day and appears to be consistent with current actual practice for a majority of the existing facilities. Should production needs increase, additional production shifts would most likely be added. The size of the required control device would not change as the number of shifts worked changed. The capture-and-control system is sized on airflow, calculated based on estimated PTE size and ensuring that the styrene concentration does not exceed 50 ppm. PTEs are sized based on resin use. Unless specific data are available, the model assumes that all of the resin is used in 2000 operating hours, or one shift operation.

We believe that the size of enclosures and control devices have been adequately estimated to be consistent with actual operations and to allow for production increases up to the limits achievable with current production facilities.

9.12 Capture Efficiency

Comment: Commenter IV-D-98 cites Rob Haberlein's work as providing the most detailed and credible estimate of realistically achievable capture efficiencies and that his work would not support use of an average capture efficiency exceeding 80 percent. The use of an inaccurate estimate of capture efficiency results in an inaccurate estimate of control cost efficiency and inflates the benefits of capture and control compared to other emission reduction options.

Response: We have reviewed Mr. Haberlein's work and respectfully disagree with the conclusion that capture efficiency cannot exceed 80 percent. Data have been collected on a number of existing facilities actually achieving 95% capture and control. These include A.R.E. in Massillon and Mount Eaton, Tecton, and Fibercast. We believe capture efficiency exceeding 80% has been sufficiently demonstrated for inclusion in the rule. Note, however, that based on numerous costing changes, capture-and-control achieving 95% reduction will no longer be required for existing open molders.

9.13 EPA Method 204

Comment: Commenter IV-D-98 stated that the costs and administrative burdens are underestimated as illustrated by the LASCO decision not to build a new tub/shower plant in Kentucky despite significant financial incentives to do so because the cost of complying with a strictly enforced Method 204 would prevent the facility from being profitable. At the very minimum, a source that can not comply with Method 204 will be forced into alternative testing requirements (Methods 204B through 204E), which have been referred to by EPA as "risky and expensive" in the study of dry docks and helicopter hangars. Further, the proposal contains no discussion of how often such alternative testing will be required or the cost implications if it is.

Response: In response to other comments, we revised the costing calculations and determined that add-on control devices with Method 204 enclosures are not cost effective for existing open molding facilities, and the above-the-floor requirement has been removed for that process group. The requirement remains in place for new facilities because we continue to believe that new facilities can be designed in such a manner to accommodate add-on controls and enclosures, as has been demonstrated by facilities in this source category, including facilities that manufacture tubs and showers.

10.0 GEL COATS

10.1 HAP Limits and MACT Floors

10.1.1 Chemical/corrosion resistant gel coats

Comment: Two commenters (IV-D-98; IV-D-101) state that gel coats used in specific corrosion protection applications must meet the same requirements as corrosion resistant resin. Commenter IV-D-98 further states that gel coats requiring chemical resistance to a wide range of chemicals including acids, bases and solvents are often based on the resins similar to those that make up the structural part of the composite and provide the necessary corrosion resistance. For this reason, the commenters believe that the HAP limitation for corrosion resistant gel coats should be 48%, the same as it is for lamination resins used to make corrosion resistant composites. Commenter IV-D-98 suggests that "corrosion resistant gel coats" be defined as "those used for products made with corrosion resistant resin" and that the rule limit the HAP content of these materials to 48%.

A third commenter (IV-D-94) also believes that the gel coat point value limits must include higher HAP limits for corrosion resistant product applications. The commenter refers to its production of weir plates and troughs used for water and wastewater treatment, which are identified in the rule as corrosion resistant applications, and states that the National Science Foundation imposes very stringent requirements for RPC materials, including often specifying the use of isophthalic polyester resins and gel coats. According to the commenter, low HAP materials would not be able to comply with the NSF requirements.

A fourth commenter (IV-D-127) recommends that a separate process/product grouping be created for corrosion resistant gel coats. According to this commenter, the current process grouping for pigmented gel coating is correct for a typical non-corrosion resistant open molding process fabricator, who applies gel coat without any paraffin wax additive. On the other hand, a corrosion resistant tank fabricator will apply a final exterior gel coat that contains a paraffin wax additive to keep air from contacting the curing resin in order to get a well cured exterior surface, resulting in better corrosion resistance. The commenter states that the wax in the parafinnated gel coat rises to the surface during curing and acts like a vapor suppressed resin application. The commenter further states that there are no alternatives for the materials they use or their fabrication method.

Response: We agree that there are technical limitations for corrosion-resistant applications that warrant a separate limit for corrosion-resistant gel coats, similar to the separate limits established for other specialty resins and coatings.

In the final rule, we established a separate HAP content limit of 48 percent for corrosion-resistant gel coats and defined them as "those gel coats used to manufacture products made from corrosion-resistant resin." We believe 48 percent HAP is still the appropriate number because the highest HAP content level allowed in all the corrosion-resistant resin process/product groupings is 48 percent.

10.1.2 High performance gel coats

Comment: One commenter (IV-D-98) states that gel coats for "high performance" products that must meet recognized standards for durability often require 48% HAP for "pigmented" gel coats and 38% HAP for "white/off white" gel coats. The commenter suggests that "high performance gel coats" should be defined as "those used for products for which NSF, USDA, or ASTM durability (or other property) testing is required" and the rule should limit the HAP content of these materials to 48%.

Response: We have added a process/product grouping for high performance gel coats and defined these gel coats as requested by the commenter.

10.1.3 Tooling gel coats

Comment: One commenter (IV-D-74) believes the proposed floor for tooling gel coats of 38% HAP is not "achievable" as defined under the Clean Air Act, which requires MACT floors to be "achievable" by application of the best available control technology. The commenter claims that EPA based the proposed floor for tooling gel coats on an infrequently used product without making a demonstration that the product is representative of the tooling gel coats on the market and actually achievable by the best-performing sources. According to the commenter, one product is too limited a foundation upon which to set a MACT floor. The commenter states that there are fewer than 30 sources in the tooling gel coat subcategory, so EPA ranked the top five sources using a point value system and selected 38% based upon the tooling gel coat product used at the median facility of the top five. EPA obtained information on the HAP content of the this product (Ashland's Orange Tooling, product code 151) solely from vendor information, including the MSDS which indicates that HAP content is 38%. EPA did not conduct independent testing of this product. This product accounts for less than ten percent of the market. The commenter's products are estimated to account for about 70% of the tooling gel coat market and the maximum HAP contents of the commenter's products range from 42 to 50%. CCP's lower HAP content orange tooling gel coat (42% HAP) has not gained a significant market acceptance and would also not be an appropriate product on which to base the MACT floor.

The commenter has no information suggesting that a proven tooling gel coat complying with the proposed rule will be available before the rule takes effect and has informed EPA of this on several occasions. Despite two years of research and development efforts aimed at developing a lower HAP tooling gel coat, CCP has not developed a product that meets the proposed HAP limitation and satisfies customer needs for quality and durability. Because EPA has not independently tested the product on which the standard is based, there has been no demonstration of the product's quality or suitability for broad use in the industry. EPA has acted arbitrarily and capriciously and exceeded its authority under the Clean Air Act by setting the floor without demonstrating that the proposed floor is achievable by the best-performing sources in the industry.

The commenter also states that because there has been no demonstration that a tooling gel coat exists that meets the proposed emission standard, setting the standard at 38 percent could have the effect of encouraging manufacturers of tooling gel coats to use para methyl styrene, which is not regulated as a HAP, as a substitute for styrene in order to provide products that meet the standard. Use of a styrene substitute would not meet the goal of reducing emissions. Likewise, lower HAP tooling gel coats may be less durable than products currently on the market, which would result in more product being manufactured and used to achieve the same results currently achieved. Again, this result would not carry out the intent of the statute.

The commenter requests that EPA revise the HAP limit from 38% to 52% for clear tooling gel coats and from 38% to 49% for pigmented tooling gel coats. According to the commenter, these limitations are based on HAP contents that are proven in the industry and actually achievable by the best performing sources.

Another commenter (IV-D-17) requests that the category of tooling gel coats be considered a specialty gel coat exempt from HAP limits similar to the exemption for specialty coatings in the Aerospace Coating MACT standards. The commenter claims that tooling gel coats are used to manufacture molds for the RPC industry and gel coats compliant with the proposed standard are not available. This commenter states that there is a strong possibility that it will discontinue manufacturing tooling gel coats if the proposed standard is not changed.

Another commenter (IV-D-101) also indicated that the proposed limit of 38% is too low. The commenter states that this HAP content is less than what they supply and is less than would be appropriate for a gel coat used in a tooling mold application because the finish on tooling gel coats needs to be durable for thousands of mold cycles. According to the commenter, higher HAP contents provide this durability while lower HAP levels produce inferior molds that have to be replaced more often, thus increasing emissions. This commenter also recommends HAP limits of 49% for pigmented tooling gel coats and 52% for clear tooling gel coats. This commenter noted in a previous letter that the current market offering is more in the range of 43 to 50% styrene, which allows the manufacturers to provide a resin with a high heat distortion and that on a volume basis this product is a very small part of the composites product offerings, but is difficult to replace with a comparable performing resin.

A fourth commenter (IV-D-98) supports this position as well and notes that tooling gel coats amount to only 2% or less of the total gel coat market.

A fifth commenter (IV-D-94) states that gel coat point values must allow higher HAP limits for tooling applications. This commenter is currently using tooling gel coats with higher HAP content than the proposed MACT rule (38% with atomized mechanical application). The EPA proposal has correctly identified that many tooling resins require higher HAP content than general-purpose resins. The same reasoning applies to tooling gel coat applications. Durability of the mold surface is essential to the longevity of the mold. Thermal stability is a key element that requires higher HAP content. Repeated high exotherms during the cure cycles can greatly reduce the life of low HAP gel coats. Greater porosity found in the low HAP materials can also create mold surface problems. This is especially critical in vacuum resin infusion, compression and RTM molding composite tool applications, where high exotherms and heated tools are required. Ironically, these are closed molding processes, which result in much lower emissions and employee exposures than open molding processes. Closed molding facilities will not be able to offset the small amounts of high HAP tooling gel coat used in tool production with large amounts of low HAP general purpose open molding resins using facility averaging. The commenter recommends that the final MACT standard allow up to 48% HAP content for pigmented tooling gel coats.

Response: The commenters are requesting higher HAP contents for tooling gel coats because they do not believe that the proposed 38% HAP content limit is achievable.

We have received additional data since the proposal was released. Based on that data, we increased the floor for tooling gel coats to 40%. We obtained very little data from industry on tooling gel coats in the original data requests and in additional efforts to obtain additional tooling gel coat data. To supplement the limited data, we looked at the tooling gel coat data used in developing the Boat Manufacturing MACT (40 CFR part 63, subpart VVVV). This is a reasonable approach because gel coat manufacturers stated that they sold the same tooling gel coats in both the reinforced plastic composites and boat manufacturing industries. The revised HAP content limit of 40% is the same as the Boat Manufacturing NESHAP HAP content limit for tooling gel coats.

We also considered the issue raised by the commenters that a low limit in tooling gel coats would actually increase HAP emissions. While we agree that more frequent replacement of inferior molds would lead to increased HAP emissions, the factual data do not indicate that a 40 percent HAP content limit results in inferior molds. Facilities in the field (both reinforced plastic composite manufacturers and boat manufacturers) are building molds with 40 percent HAP tooling gel coat. We have no data to indicate that these facilities are producing lower quality molds than average, and none of the commenters has been able to provide objective data to substantiate that reduced mold life is inevitable with low-HAP gel coats. The information provided was based on assumed reduction in mold life. Also, the fact that one of the commenters covers 70 percent of the market is irrelevant, because MACT floors are set based on best control, not market share. In the absence of objective data that the facilities that use low-HAP tooling gel coats produce inferior molds with shorter mold lives, compared to the rest of the industry, the MACT floor must be set based on the best performing facilities. In this case, that results in a floor of 40 percent HAP.

10.1.4 Clear gel coats

Comment: One commenter (IV-D-98) states that although clear cultured marble gel coats have been formulated with HAP levels as low as 40%, the tolerance for thermal shock and water resistance are lowered with lower HAP levels. According to the commenter, 48% HAP clear coat is required for manufacturers to maintain current warranties and many have switched back to the high HAP clear gel coats due to the poor performance of the lower HAP clear gel coats. The commenter suggests that "clear gel coats for cultured marble" should be defined as "those used for products subject to ANSI Z124 testing" and the rule should limit the HAP content of these materials to 48%.

A second commenter (IV-D-101) adds that, to provide a clear gel coat product for all industries, a HAP content level of 48% is needed. According to this commenter, exterior and marine applications require a higher molecular weight polymer, as found in higher HAP coatings, to meet the physical properties required for exterior and marine applications, such as thermal stresses and weatherability. The commenter thus claims that the proposed limit of 44% does not take into account the entire spectrum of uses and does not satisfy the requirements of their applications.

This commenter (IV-D-130) also states that the floor of 44% HAP is considerably lower than that of the current marketplace offering of 48 to 50 percent. The commenter questions whether the clear gel coats offered at this lower HAP level will withstand the test of time as far as that material's performance durability.

Response: The commenters are requesting an increase in the allowable HAP content of clear gel coat from 44% to 48% or higher. We are bound by the statutory requirements of the Clean Air Act to set MACT floors based on the average of the best performing sources as illustrated in the available data. In the absence of specific data to support the request, we have no basis to change the floor.

In developing different process product grouping for gel coats, we did consider the different performance characteristics of different types of gel coat. These types were tooling gel coat, clear gel coat, pigmented gel coat (white/off white), pigmented gel coat (all colors except white/off white), fire retardant gel coat, and corrosion resistant/high strength gel coat. Based on information provided by industry, we determined that these different gel coat types had sufficiently different characteristics that they should be considered separately for floor determinations. However, we do not have data to demonstrate that it would be appropriate to further subcategorize clear gel coats based on each gel coat's performance characteristics.

10.1.5 Pigmented gel coats

Comment: One commenter (IV-D-130) states that only the white/off-white and some pastels can meet a floor of 30% HAP, because of the titanium oxide and inert filler loading. Most solid colors require a HAP content of 38 to 40 percent. Higher performance pigmented gel coats that require high molecular weights would, therefore, need a higher monomer content to achieve workable viscosities, and would probably no longer be available to the market place.

Response: The commenter is requesting a HAP content limit of 38 to 40 percent HAP for non-white pigmented gel coats.

White/off-white gel coats will be defined as those containing ten percent or more by weight TiO_2. As proposed, these gel coats will be subject to a HAP limit of 30 percent by weight and all other pigmented gel coats will be subject to a HAP limit of 37 percent by weight.

At the time we developed the proposed rule, we had no data on pigmented gel coats other than white/off-white and some reds. Based on industry comments, we split pigmented gel coat into two groupings, white/off-white and other colors due to the fact that white/off-white gel coats contain titanium dioxide, which is a heavy pigment, while other colors do not. At the time we created this new grouping, we requested data from the industry concerning the HAP contents of pigmented gel coats. The industry representatives indicated that these gel coats typically have 37 percent HAP. Because non-white pigmented gel coats comprise a very small part of the total industry, we elected to accept the 37 percent number, rather than attempt to gather additional data. The commenter provided no data to support their request. In the absence of new data, we have no basis to change this floor.

10.1.6 Surface gel coats

Comment: One commenter (IV-D-130) states that the proposed MACT does not provide for the manual application of surface coat gel coats, a special type of gel coat.

Response: Gel coats are sometimes applied to the exterior of parts with a brush or a roller, not spray equipment. The proposed rule did not provide for accurately calculating emissions from this type of process because a point value was not established for manual application of gel coats. The point values have now been replaced by Unified Emission Factors (UEF), but there is no UEF equation for manual application of gel coat either. We have added a footnote to the emission factor equation table in the final rule indicating that the equation for either atomized or nonatomized gel coat application can used for manual application of gel coats, or the manual resin application equation may be used. For compliance purposes, we have added that manually applied gel coat should meet the same emission limits as spray applied gel coat.

We have no data to indicate that surface applied gel coats are different from other gel coats. Therefore, we have not created a new process/product grouping specifically for surface gel coats.

10.2 Exemption for Fire Retardant Gel Coats

Comment: Two commenters (IV-D-18; IV-D-98) request that the category of fire retardant gel coats be exempt from HAP limits. Both commenters note that fire retardant gel coats are used in manufacturing transportation parts, building product, trains, aerospace, theaters. Commenter IV-D-18 states that these are all critical areas of applications and require various UL, ASTM and Fire Rating Certifications. Commenter IV-D-18 states that these gel coats should be considered a specialty gel coat, exempt from HAP limits, similar to the exemption for Specialty Coatings in the Aerospace Coating MACT standards. Commenter IV-D-98 suggests that fire retardant gel coats be defined as "those used for products for which low flame/smoke resin is used."

Commenter IV-D-18 claims that fire retardant gel coats compliant with the proposed MACT standard are not currently available. The commenter claims that the industry and his company currently do not have a proposed MACT compliant low HAP fire retardant gel coat and states that there is a strong probability that his company would discontinue manufacturing fire retardant gel coats if the proposed standard is not changed.

Response: We have added a process/product grouping for fire retardant gel coats. These gel coats are defined as gel coats used in low-flame/low-smoke applications. We have established a HAP emissions limit of 854 lb/ton which is equivalent to gel coats with a maximum HAP content of 60 percent using atomized application.

11.0 RESINS

11.1 Applicability

11.1.1 Shrinkage control resins

Comment: One commenter (IV-D-45, -46, -47) uses a resin with special shrinkage control properties that are unique and cannot be obtained in any other way. The resin contains 52% HAP. The unique attributes of shrinkage controlled resins were not identified when EPA surveyed the industry. The commenter requests that EPA create a subcategory for these resins with a maximum HAP level of 52%. The commenter notes that a precedent for this has already been established with the special category for Class 1 fire performance resins with allowable HAP content of 60%.

A second commenter (IV-D-98) similarly notes that a new process group is needed for low-shrink resins with maximum point values for mechanical and manual application that allow HAP contents of up to 50% to be used. The commenter suggested the use of the following definition: "A resin is considered to be shrinkage-controlled if it is comprised of a combination of thermoplastic and thermosetting resins dissolved in a reactive diluent that when promoted, catalyzed and filled according to the resin manufacturer's recommendations demonstrates less than 0.3% linear shrinkage according to ASTM D2566." This commenter also suggested that a new item in Table 3 be established for this operation type, with maximum point values for mechanical and manual application that allow HAP contents of up to 50% to be used.

A third commenter (IV-D-94) states that a specialty process group is needed for high molecular weight, low shrink resins used in wind turbine blade manufacturing. This commenter's Texas facility produces wind turbine blades. The blade internal construction is predominantly epoxy resin, with a polyester skin and a polyester gel coat. The skin is made of a "tooling resin", which has high molecular weight and low shrink properties. This is to prevent distortion and potential skin separation from the epoxy layers during the curing exotherm, or during use in direct sunlight and temperature extremes. The resin currently in use is 42% HAP unfilled, and uses non-atomized mechanical application. The facility would be unable to gain any relief by facility averaging because the facility predominantly uses zero-HAP epoxy resin, rather than a low HAP production resin. It also has closed molding production. It would be unfair to penalize a facility for using non-HAP resins and closed molding processes, or to prevent production of non-polluting, energy saving wind energy equipment. The commenter recommends that the Final Standard include a specialty resin process group to include high strength, shrink resistant specialty resins up to 48% HAP, (with non-atomized application). This would be similar to an EPA accommodation made for flame and resistant resins, and similar to EPA accommodation for tooling resins. At a minimum MFG requests an accommodation to use a tooling resin (higher HAP) for this type of application, or include this application in the tooling resin process group. When compared to the overall industry this would be a very low volume of resin.

Response: The commenters are requesting a higher HAP content limit and/or specialty category for low shrink resins. Our understanding is that these are highly filled resins with special chemistry that allows them to cure at room temperature with less shrinkage than a typical resin.

Given the unique properties of this resin, we agree that a separate process/product grouping is appropriate. The resin manufacturer indicated that the maximum HAP content of the resin is 50 percent. Therefore, we have set HAP emissions limits for shrinkage-controlled resins that allow up to 50 percent HAP. This specialty resin costs significantly more than other resins, which provides a deterrent for facilities using the resin where its special properties are not necessary.

11.1.2 Corrosion resistant resins

Comment: One commenter (IV-D-111) requests that the list of corrosion resistant industry standards be amended to include (1) Underwriters Laboratories 215 regarding the construction and performance of oil water separators and (2) the International Association of Plumbing and Mechanical Officials Material and Property Standards for Prefabricated Septic Tanks (IAPMO PS-199). The commenter manufactures both of these products for use in corrosive environments, so both should be listed in the corrosion resistant standards.

Response: We have added these standards to the definition of corrosion resistant products.

11.1.3 High strength resins

Comment: One commenter (IV-D-73) supports the inclusion of a separate process group for products that have high strength properties requiring specialized raw materials. The commenter points out that EPA provided separate process groups for products with a Class I smoke and fire rating and defined high strength products as part of the corrosion resistant group and that EPA requested comments on this approach and asked for data on additional products that may require separate process groupings. In response to this request, the commenter recommends that the rule retain separate process groups for products requiring a Class I smoke and fire rating, corrosion resistance, or high strength properties. The commenter also suggests that, for clarity, in Tables 3 and 5, designate operation types as "corrosion-resistant or high-strength (CR/HS)" and "non-CR/HS" instead of using a footnote stating that corrosion-resistant includes high-strength products. As an alternative, the commenter states that EPA could refer to these operation types collectively as "high performance (HP)" and define this term as including corrosion resistant, high-strength, and any other high performance types identified by commenters.

Response: The commenter is requesting a clarification that high-strength resins are included with corrosion-resistant resins. We have changed the process product grouping name for corrosion-resistant resin to corrosion resistant/high strength resins.

11.2 HAP Limits and MACT Floors

11.2.1 Tooling

Comment: One commenter (IV-D-36, -37) does not support a MACT floor for application of tooling resin gel coats and resins that includes non-atomized application processes. The commenter states that in their experience non-atomization of gel coat resins is not technically feasible for many applications and that non-atomized application of tooling resins results in inferior quality tools, which add waste and cost to the fabrication process. The commenter requests that the MACT floor for all tooling resins be based only on atomization application techniques.

Response: Based on information obtained during the development of responses to the public comment period, we have been informed that the one facility previously using flow coaters for the application of tooling resin has stopped using flow coaters. Therefore, the MACT floor determination for tooling resins no longer includes any facility using nonatomized application techniques.

11.2.2 Filament Application

Comment: One commenter (IV-D-98) believes higher HAP limits are needed for the filament application of corrosion resistant products. The commenter claims that the rule as proposed will eliminate use of certain types of corrosion resistant resins that impart required properties to certain applications. The commenter noted that it was "remarkable" that the proposed limit for corrosion resistant filament application resins was lower than for non corrosion resistant filament application resins. The commenter believes that the emissions limit for all categories of filament application should be 178 lb/ton. According to the commenter, this change will have insignificant impact on EPA's total HAP emissions reduction target, with the difference in emissions reductions being 3 tons per year. The commenter also stated that EPA should note that the 178 lb/ton emission limit (or 45% HAP resin) appears to be the lowest level achievable by filament application without sacrificing product quality and performance.

In support of the commenter's request, the commenter makes the following argument. The commenter states that the resin chemistry used in filament applications cannot be altered without affecting resin properties. For corrosion resins, styrene content allows higher molecular weight, which imparts corrosion resistance, UV stability, and high impact strength. High molecular weight resins also require higher styrene (HAP) content to reduce resin viscosity to workable levels. A reduction in the styrene content of resin causes a significant change in the resin viscosity, thereby making it difficult for composite fabricators to utilize in viscosity sensitive fabrication methods. For these reasons, resins used in filament applications cannot achieve the proposed emission limit of 163 lb/ton, corresponding to a 42% HAP resin, without substantial and adverse impacts on product quality and performance.

Another commenter (IV-D-130) states that the proposed MACT of 42% HAP cannot be met with an isophthalic resin without some compromise to the physical properties of the cured resin. The commenter requested EPA to consider the 48% HAP limit found in SCAQMD Rule 1162.

Response: The commenters are requesting that higher HAP resins be allowed for corrosion filament application because they do not believe that the proposed limit of 42% can be achieved.

While we acknowledge the commenters concerns, we developed the floor for this process/product grouping in the same manner as floors for other process/product groupings in open molding. We gathered data from industry and ranked the performance of the facilities in the corrosion-resistant process group and set the MACT floor based on the average of the best 12 percent, as required by law.

Though we are not changing the floor for filament application, we are retaining a provision included in the proposed rule that allows facilities to use the same resin in multiple processes. The rationale for this provision is, while our floor development ranking procedure is correct, we also realize it does not account for the fact that some facilities use multiple operations to produce components of the final product, and the resins used in the subcomponents must be compatible. This provision will allow most facilities the flexibility to use the necessary level of HAP in corrosion-resistant applications because mechanical operations have a higher-HAP content limit.

11.2.3 CR manual application

Comment: One commenter (IV-D-130) states that the proposed MACT of 40% HAP cannot be met with current isophthalic resins without compromising corrosion resistance. The commenter recommends that consideration be given to SCAQMD Rule 1162, with 48% HAP.

Another commenter (IV-D-127) recommends that the model point value for corrosion resistant manual resin application be changed from 124 to 190 to reflect the use of the same percent HAP used in mechanical resin application. The commenter notes that the facility that sets the floor using a 40% HAP resin is not typical of a true corrosion resistant company because that facility uses only manual application while true CR companies uses both manual and mechanical application techniques. A true CR tank fabricator must use the same resin system throughout the vessel, with mechanical and manual applications, so the percent HAP would be the same for both applications. The floor setting facility, in contrast, produces only one off-the shelf product with manual application and therefore has more latitude in using a lower HAP resin than a typical CR tank fabricator.

Response: As discussed in the previous response, the floor is based on the data available for this process/product grouping. However, as with filament application, the provision allowing facilities to use the same resin in multiple operations should allow enough flexibility for facilities to meet rule requirements, but still produce products with the necessary properties. Therefore, facilities that produce corrosion-resistant and noncorrosion-resistant products using both manual and mechanical resin application will be able to use the same resin in both operations.

11.2.4 NCR manual application

Comment: One commenter (IV-D-130) states that the proposed MACT of 32.3% can only be met in limited application and does put some constraints on the physical properties of the cured resin.

Response: The MACT floor has to be set based on the performance of the best facilities as indicated by the data we have collected. Based on the latest data, the floor for non-corrosion resistant manual application has been increased slightly to 33.6%. In any case, very few facilities have manual operations only. The provision allowing the use of the same resin in multiple processes will allow facilities with mechanical operations to use resins with HAP content of 38.4%.

11.2.5 NCR centrifugal casting

Comment: One commenter (IV-D-130) states that the proposed MACT of 35.5% HAP would result in a resin too high in viscosity, which may create air release problems. The commenter states that lower molecular weight resins would cause some limitations in physical property requirements.

Response: We received new data that changed the floor for centrifugal casting to 37.5 percent HAP. With less than 30 facilities in the process group for which we have data, the MACT floor must represent the average performance of the top 5 facilities. We have no data to support raising the floor any further.

12.0 PULTRUSION

12.1 95% Requirement

12.1.1 Feasibility and Effectiveness

Comment: One commenter (IV-D-44) supports the proposed standard and believes the technology needed to comply is readily available to any company willing to put forth the effort. The commenter states that they have complied with the proposed standards since its facility opened in 1992, that the latest test results indicate styrene destruction is more than 98% efficient, and that the company has remained competitive while operating with controls.

Response: We appreciate the commenter's support and agree that the technology needed to achieve 95% emissions reduction is available and feasible for new facilities because they can incorporate controls in the original plant designs.

Comment: Two commenters (IV-D-22; IV-D-32, -33) questioned the technical and economical feasibility of capture-and-control for pultrusion facilities.

One commenter (IV-D-22) opposes capture-and-control for pultrusion sources based on technical feasibility. This commenter states that they are unaware of any company successfully using capture-and-control techniques across the variety of simple and complex parts that are typical of a custom pultrusion business.

The other commenter (IV-D-32, -33) believes it is not reasonable to expect most pultrusion plants to achieve a 95% emission reduction regardless of whether these are new or existing sources. According to this commenter, a 60% emission reduction is practical if CFA's and its concerns are addressed. This commenter notes that, for the reasons stated by CFA, add-on control would be cost prohibitive and technically infeasible at their facility.

Response: Based on the latest data and updates to the costing analysis, we have determined that the above-the-floor requirement for add-on controls is not cost effective for existing sources. Therefore, we have removed 95 percent emission reduction requirement from the final rule.

We disagree with the commenters' belief that add-on control is infeasible for new sources. A facility has been identified that has successfully used add-on capture and control for many years. We stand by our position that new facilities can be designed in a manner that enables capture and control to be added in a cost-efficient and effective manner.

Additionally, we are bound by statutory requirements to set new source MACT based on the level of control that is achieved in practice by the best controlled similar source. We cannot disregard the evidence that a similar source has successfully implemented capture and control.

Comment: One commenter (IV-D-32, -33) stated that add-on control is not an appropriate control for pultrusion processes. According to the commenter, add-on controls are no more effective than preform injection or direct die injection. The commenter claims that these technologies, as well as wet area enclosures, do not cause emissions to be generated, and the capital costs and operating expenses for add-on control far exceed the expenses of alternative pollution prevention techniques. The commenter refers to detailed cost information provided by CFA. The commenter further states that add-on control devices offer no advantage over other technologies and should not be a part of existing or new source MACT for pultrusion operations.

Response: As discussed in the response to the previous comment, we have removed the requirement for 95 percent reduction for existing sources based on the revised cost analysis. This would eliminate the need for existing pultrusion facilities to install add-on controls.

As previously discussed, we are bound by the requirements of the Clean Air Act to establish new source MACT equivalent to the level of control achieved by the best controlled similar source. A pultrusion facility has successfully installed add-on controls and operated them with a 95 percent emission reduction. Therefore, we have retained the 95 percent emission reduction requirement for new sources.

12.1.2 Costs and cost effectiveness

Comment: One commenter (IV-D-22) opposes capture-and-control for pultrusion sources based on cost. The commenter points out that EPA estimates the incremental annual cost for 95% capture-and-control for new sources to be $15,000/ton of additional HAP reduction assuming inlet concentration of 100 ppmv and that EPA judged this to be unacceptably high for existing sources with emissions less than 100 tpy. The commenter notes that no incremental annual cost for 60% capture-and-control is provided except as included in the average value of $1600/ton for existing sources. According to the commenter, this value includes relatively inexpensive devices such as covers and enclosures, so the average value probably under-predicts the cost of the 60% capture-and-control costs. The commenter reported 22 tons of HAP from pultrusion operations in 2000. Assuming an intermediate value for 60% capture-and-control of $8000/ton of HAP reduction, the commenter estimated costs for capture-and-control to be between $100,000 and $110,000 annually. The commenter claims that this is an overly burdensome amount for companies that are struggling to retain profitability. The commenter, therefore, requests, in part, that good, reliable cost effectiveness be fully demonstrated before the proposed above-the-floor capture-and-control is implemented.

Response: As discussed in chapter 9, we revised a number of the assumptions used in the cost analysis (including the 100 ppm assumption)and determined that the above-the-floor requirement for 95 percent emission reduction is not cost-effective for existing open molding sources, including pultrusion. We, therefore, removed the above-the-floor requirement for existing sources in the final rule and existing facilities are not expected to use add-on controls to comply with the final rule.

Although we agree with the commenter's position for existing sources, we disagree with their position as it applies to new sources. New facilities can be designed from the beginning in such a manner that add-on controls are feasible and economical. Furthermore, the Clean Air Act requires that MACT for new sources be set equivalent to the level of control achieved by the best controlled similar source. Cost is not a factor for consideration in setting the MACT floor for new sources. Therefore, we have retained the requirement for new pultrusion sources to achieve 95 percent emission reduction in the final rule.

12.1.3 Economic analysis

Comment: One commenter (IV-D-22) notes that the specification of capture-and-control requires accurate financial analysis and measurement of its impact on business. The commenter requests that broad technical viability and good, reliable cost effectiveness, including health related issues, be fully demonstrated before the proposed above-the-floor capture-and-control is implemented.

Response: As noted in responses to other comments, we have revised the cost analysis and determined that the above-the-floor requirement for 95 percent emission reduction is not cost effective. We removed the requirement for existing sources from rule. A revised economic analysis based on the latest data has been conducted.

12.1.4 Worker safety

Comment: One commenter (IV-D-22) opposes capture-and-control for pultrusion sources based on worker safety. The commenter notes that the EPA analysis assumes an inlet concentration of 100 ppmv, but their measured concentrations are about 12 ppm. At that concentration, according to the commenter, capture-and-control is not viable. The commenter claims that efforts to increase the inlet concentration lead to OSHA and industrial hygiene concerns and that any changes increasing the concentration to over 20 ppm would exceed ACGIH recommended maximums. Further, the commenter states that levels approaching 50 ppm require installation of engineering controls (ventilation or HAP prevention) and exposure to these levels would meet with serious union objections. The commenter notes that these considerations result in higher capture-and-control costs. The commenter requests that health related issues be fully addressed before the proposed above-the-floor capture-and-control is implemented.

Another commenter (IV-D-32, -33) states that pultrusion products requiring constant attention would have to have an enclosure large enough for the operator to be inside, and this would increase health risks due to styrene exposures.

Response: As noted in previous responses, the above-the-floor requirement for 95 percent emission reduction is no longer required for existing sources and, therefore, capture and control is no longer an issue for existing facilities. We also note that our revised cost analysis now uses a target maximum inlet concentration of 50 ppm rather than 100 ppm. The 50 ppmv target is the same as the current OSHA 8-hour time weighted average limit for styrene.

We have not changed our position on capture and control for new sources. New facilities can be designed with the appropriate measures in place to avoid worker exposure in excess of OSHA requirements. As previously discussed, facilities that have incorporated capture and control meet current OSHA requirements for worker safety.

12.2 Compliance

12.2.1 Point values

Comment: One commenter (IV-D-65) believes a point value system should be permitted for pultrusion operations with preform injection being given the same point value as direct die injection. The commenter believes that new and existing sources should be able to demonstrate compliance with a combination of technologies as long as the weighted average emissions reduction meets the required reduction. According to the commenter, such a point value system should include preform injection, direct die injection, wet area enclosures, and standard wet-out technologies.

Another commenter (IV-D-43) also believes that a combination of technologies offers greater opportunities for success. This commenter suggests a combination of wet area enclosures, preform injection, and "no control" when enclosures are open longer than the allowed time.

Response: We do not have sufficient data to develop an emission limit in terms of pounds of allowable HAP emissions per ton of resin or gel coat used for pultrusion. Therefore, we expressed pultrusion emission limits as a percent reduction or a work practice standard. However, we have added provisions to the rule to allow facilities to average across all pultrusion lines. This average includes predetermined emission reduction values for wet area enclosures, preform injection, and direct die injection.

12.2.2 Preform injection

Comment: Several commenters (IV-D-32, -33; IV-D-22; IV-D-55) believe preform injection, a technique that applies resin to the reinforcements in a closed box, should be an allowed control because it is a more viable and readily attainable control technology than either add-on control or direct-die injection. One commenter (IV-D-32, -33) believes preform injection should qualify for a 90% emission reduction, and the CFA proposed definition and requirements should be used as the criteria for preform injection. A second commenter (IV-D-22) notes that although it falls short of 95%

reduction, reduction rates of 90% are attainable and an excellent trade-off given the applicability, capital requirements, and operating costs associated with preform injection.

Commenter IV-D-32, -33 states that they have performed some pultrusion that would qualify as preform injection and have a large number of pultrusion processes that could be upgraded to meet the CFA's preform injection criteria.

Commenter IV-D-22 encourages consideration of preform injection but does not see preform injection as an alternative to enclosures for complex parts. This commenter supports an industry proposal for averaging, whereby combinations of uncontrolled processes and processes with defined emission reduction rates are allowed so long as at least 60% reduction is maintained. Preform injection would be essential to the viability of averaging.

A third commenter (IV-D-55) also believes that preform injection with 90% reduction must also be a compliance option and that averaging on a 12-month rolling average basis must be allowed. This commenter believes preform injection is a viable technology and will be used extensively if it is allowed to be used in averaging to meet the 60% reduction required. According to this commenter, these proposed changes will not increase emissions from the present proposal and will allow pultruders to reduce emissions in the short and long term, whereas add-on control necessitates an increase in emissions before destruction.

Response: We agree with the commenters that preform injection is a viable technology for reducing emissions from pultrusion operations. The technology will be included in the rule as an option for meeting the 60% emission reduction requirement for existing pultrusion sources. However, as stated by the commenters, preform injection (and direct die injection) do not meet the 95 percent HAP emissions reduction requirement, which is the new source MACT floor. The CAA does not allow us to be less stringent than the floor. Therefore, we cannot allow preform injection, or direct die injection, to be a compliance option to meet the 95 percent HAP emissions reduction requirement.

We also added a definition for preform injection in the final rule that is based on the commenter's suggested language.

Comment: Two commenters (IV-D-48; IV-D-49) believe that "closed forming" and "wet area enclosure" control methods for pultrusion fall one short of what will work for his operations. The commenters note that EPA has studies on file showing that air flow is the single most important factor in determining emissions from pultrusion. The commenters request that preform injection be included on the list of approved pollution prevention technologies because preform injection is a proven method of pultrusion technology currently in use while direct die injection remains a theoretical, not practical, technology. According to the commenters, without a third control technology, they will have to abate more than 50% of the production they run at a cost per ton for full abatement of $8,400, with actual as installed costs in the range of $6,000/ton as the MACT standard is written. The commenter claims that these costs are prohibitive to operations and may render those operations infeasible.

Another commenter (IV-D-65) requests that EPA recognize preform injection as equivalent to direct die injection with resin drip collection. The commenter states that, according to PIC's study, preform injection achieves emission reductions of 90% and can be used for a wide range of products. The commenter further states that direct die injection is not a widely used technology because it can only be used for thin, small, simple parts and it slows production speeds by approximately 50%. This commenter also notes that, in preform injection, a pre-wet unit introduces resin at more than one location, so the word "pre-wet" should be removed from paragraph (b)(1) and paragraph (b)(4) should be removed entirely.

A fourth commenter (IV-D-43) also notes that preform injection provides approximately 90% reduction in styrene emissions and allows flexibility with a wide range of products. This commenter also requests that preform injection be included as a control technology because it is essential to the viability and growth of the company.

Finally, a fifth commenter (IV-D-32, -33) indicated that they provided EPA test data showing preform injection to be 91.3% effective in reducing emissions, making this technology as effective as direct die injection and add-on control.

Response: As explained in the response to the previous comment, we agree that preform injection is an important emission reduction technology for pultruders and we have added it as an option in the rule. Direct die injection will also remain an allowable emission reduction technology for those operations for which it is suited.

Comment: Two commenters (IV-D-98; IV-D-26), with slight difference, suggest the following definition for “Preform Injection”:

> “Preform injection means a process where liquid resin is injected via enclosed hoses, pipes or tubes directly into one or more chambers with openings only large enough to admit reinforcements. Resin which drips during the process is collected in closed piping or covered troughs and into a covered reservoir for recycle. Resin storage vessels, reservoirs, transfer systems and collection systems are covered or shielded from ambient air. Preform injection differs from direct die injection in that the injection chamber(s) may not be directly attached to the die in preform injection.”

Response: We added a definition for preform injection in the final rule. The added definition is nearly identical to that proposed by the commenters.

12.2.3 Direct die injection

Comment: Several commenters (IV-D-55; IV-D-22; IV-D-32, -33; IV-D-26) expressed concern over the feasibility of using direct die injection to comply with the proposed standards.

Commenter IV-D-55 does not consider add-on control as a viable option and believes direct die injection is not a proven production methodology. According to this commenter, trials over the years on direct die injection have produced unacceptable results.

Commenter IV-D-22 believes that direct die injection has merit but has limited applicability and is inefficient. This commenter estimates that it could used on a maximum of 1% of their product volume.

Commenter IV-D-32, -33 believes direct die injection does not have broad practical use in the industry. According to this commenter, it can only be applied to thin, small, simple profiles and then only if performance specifications are not critical and this technology offers little as an alternative to wet area enclosures.

Commenter IV-D-26 notes that they have worked with direct die injection for many years without success and indicates that none of their current customers could be served by any available form of direct die injection. This commenter does not consider direct die injection to be a feasible control method for new or existing sources.

Response: We agree with the commenters concerns that direct die has limited applicability; however, we do believe it is a useful emission reduction technique for some operations. Direct die injection will continue to be an allowed control technique under the rule for existing sources, but it is not a requirement. No facility is required to utilize direct die injection, but we see no reason to eliminate direct die injection as an option for those facilities for whom it is useful.

12.2.4 12-month rolling average

Comment: Several commenters (IV-D-43; IV-D-32, -33; IV-D-22; IV-D-48; IV-D-49; IV-D-98) request a 12-month averaging period for compliance. Commenter IV-D-43 notes that his facility manufactures a variety of small and large quantity runs and the company will be severely limited without this averaging provisions. Commenter IV-D-33 believes that emission averaging is needed for pultrusion plants to comply with a 60% emission reduction requirement. Given the uncertainties of production schedules, etc., Commenter IV-D-33 states that it is not feasible for the plant to guarantee compliance with a 60% reduction mandate at every moment, but compliance on a 12-month rolling average basis can be documented. According to this commenter, such documentation would be similar to accounting already required under a state permit. This commenter also states that averaging would encourage facilities to adopt the best feasible emission control whenever possible to leave more options open for processes that are more difficult to control. This commenter asked EPA to consider the two proposed averaging schemes they had submitted.

Two commenters (IV-D-33; IV-D-98) note that pultruders should be able to use a combination of preform injection, wet area enclosures, direct die injection, and “no control” to meet the 60% emission reduction requirement. The commenters point out that emission credits could be earned to offset the processing of products with an open bath and “no control.” According to the commenters, without averaging, facilities will be forced to discontinue manufacturing products that require constant open access (for example, certain complex profiles) or to shut down any processing line when there is an extended period of processing adjustments (which require open access to the line). A third commenter (IV-D-22) also supports the industry proposal for averaging and notes that preform injection would be essential to the viability of averaging.

Response: The commenters requested that 12-month rolling averaging be allowed under the rule for pultrusion so they can use different emission control technologies as appropriate. We agree that averaging will add some flexibility for industry to comply with the final rule without increasing emissions. Therefore, we have included in the final rule an averaging provision for existing sources. For purposes of averaging, we have assigned wet area enclosures a 60 percent HAP emissions reduction, and direct die injection and preform injection a 90 percent HAP emissions reduction.

12.2.5 Air flow management

Comment: One commenter (IV-D-22) believes air flow management is a viable option for emissions reduction via pollution prevention for pultrusion operations and should be re-considered by EPA. The commenter notes that higher air velocities cause higher evaporation and that they have demonstrated that simple shields and barriers can be very effective in reducing air flow velocity and therefore emissions.

Response: The MACT floor for existing sources must be based on the average emission limitation achieved by the best performing 12 percent of existing sources. Although air flow management has been shown to reduce emissions, it does not consistently reduce emissions at or more than the 60 percent reduction level. Therefore, we are not adding it as an option in the rule, except for existing sources manufacturing large parts (see Section 12.2.6), which we have determined can not achieve the 60 percent emissions reduction level.

12.2.6 Existing sources manufacturing large parts

Comment: Several commenters (IV-D-22; IV-D-32, -33; IV-D-26; IV-D-98) requested an exemption for large, complex parts from wet area enclosure requirements because of accessibility concerns. Commenter IV-D-22 believes they can apply wet area enclosures to many, but not all, of their pultrusion operations because of accessibility concerns. This commenter suggests a definition profile for "complex parts," a sub-category for which enclosures would not be appropriate. The commenter states that such parts would include specific geometric shapes as well as parts with a total cross sectional perimeter of at least 60 inches. The commenter suggests that no control be specified for such processes because the database does not show successful implementation of environmental control for pultruding these shapes.

Commenter IV-D-32, -33 agrees that certain large profiles should receive special consideration because they require continuous access. According to this commenter, such products typically will have over 1000 individual material feeds and a cross sectional perimeter of 60 inches or more. This commenter points out that these operations are a small percentage of their total processing, but are important to the overall success of the business. The commenter claims that (1) wet area enclosures are not practical for these large profiles and would constrain the operator's access to material feeds and tooling and (2) add-on controls would be even more restrictive. The commenter further claims that while preform injection works well with smaller profiles, it is also not acceptable for large profiles. The commenter also claims that direct-die injection is largely experimental and has many technical challenges for large parts. Finally, the commenter claims that large parts should be exempt because no effective control technology has been identified.

Commenter IV-D-26 states that the four large profiles, which contain over 1000 fiber inputs, they manufacturer cannot be controlled under current recommended guidelines or preform injection. While these profiles could be enclosed, the commenter sees no practical way of maintaining the fiber forming area without constant access. The commenter notes that preform injection on profiles such as these would also require constant access to resin saturated fibers. This commenter considers large parts to be those with 1000 or more reinforcements and a profile surface perimeter of 60 inches or more (surface perimeter includes all surfaces). Therefore, the commenter believes these parts should be exempt because there are no practical controls for them. The commenter commits to continually assess controls for large parts and implement them when a control method becomes technically and economically feasible.

Commenter IV-D-98 notes that there are no controls available for "large" pultruded parts such as bridge beams, decking, windmill blades, etc., and the manufacture of these products should be exempt from control requirements. According to the commenter, production of these parts requires continuous operator adjustment, which, combined with the large size of the forming and resin bath areas, makes the use of wet area enclosures impractical and the use of add-on control prohibitively expensive. The commenter states that averaging will not help with large parts because facilities would be forced to run very large quantities of small parts to offset even short runs of large parts. The commenter suggests that the rule be changed to define large pultruded parts as those with: (a) 1,000 or more reinforcements (roving bundles or mats) and (b) cross sectional surface perimeter of 60 inches or more, and that no control should be required for production of these parts. The commenter would be willing to agree to conduct a regular assessment of the availability of controls for large parts and will use such controls should they become technically feasible, cost effective, and affordable.

Response: We agree that wet area enclosures, which form the basis of the existing source floor, are not feasible for large parts as defined in the comment. Therefore, we developed a separate MACT floor for large pultruded parts. A review of the available data indicates air flow management (as described in more detail in Table 4 of the final rule) has been used to control emissions from this process group. Therefore, the existing source MACT floor is air flow management. The final rule has been changed to reflect the new floor.

12.3 Wet Area Enclosures

12.3.1 Open area time

Comment: Many commenters (IV-D-22; IV-D-65; IV-D-43; IV-D-32, -33; IV-D-26; IV-D-55; IV-D-98) requested that the limit on wet enclosure open times of 30 minutes per shift be changed to 90 minutes per day to allow for necessary repairs, start-ups, and shutdowns.

Response: We evaluated the commenters' request. The facilities that actually set the floor for pultrusion are limited to 30 minutes per 8 hour shift or 45 minutes per 12 hour shift. In addition, the facility may average over all pultrusion lines. We have included averaging provisions across lines in this final rule. We have also allowed a facility to have the doors and covers open 90 minutes per day providing the machine is operated three 8-hour shifts, or two 12-hour shifts.

12.3.2 Multiple wet area enclosures

Comment: Several commenters (IV-D-65; IV-D-98; IV-D-26; IV-D-32, -33) request proposed paragraphs 63.5830(b) and (b)(1) be amended by making the word "enclosure" plural. The commenters noted that some companies operate pultrusion lines with multiple dies for which it is more practical to use several separate enclosures.

Response: We agree that it may be more practical for some facilities to use multiple wet area enclosures. Therefore, we have changed the final rule accordingly.

12.3.3 Height

Comment: Three commenters (IV-D-32, -33; IV-D-43; IV-D-98) note that the height restriction on wet area enclosures is not practical because it does not allow room above the highest part to make adjustments to the process or equipment. According to the commenters, the actual height of the wet area enclosure has no impact on emissions because the puller window is the controlling factor and styrene emissions will remain near the bath without air flow. The commenters, therefore, ask that the restriction be removed.

Response: We have no data to suggest that limiting the height of the enclosure impacts the amount of HAP emissions reduction. Therefore, we have removed the height restrictions on the wet area enclosures from the final rule.

12.3.4 Doors and access panels

Comment: One commenter (IV-D-65) suggested that the requirement for wet area enclosure doors and access panels to "close tightly to avoid vapor leakage" be changed to state that doors and panels should "completely cover" openings. According to the commenter, it is unreasonable to require airtight doors and hatches. This commenter and others (IV-D-32, -33; IV-D-26; IV-D-98) suggest that doors and hatches should be permitted to be opened without time restrictions so long as the total open areas do not exceed the maximum allowed based on the puller windows.

Response: Our intention in the proposed rule is that doors should stop air flow rather than be air tight. Therefore, we have reworded the language in the final rule to clarify that doors should "close tightly." and have dropped the language "to avoid vapor leakage" We do not agree that the language "close tightly" by itself suggests an airtight requirement, and therefore are not removing "close tightly" form the rule. In addition, we have changed the wording in the final rule to eliminate time restrictions on open areas that do not exceed the maximum allowed based on the puller windows.

12.3.5 Venting

Comment: One commenter (IV-D-22) is concerned that the requirement for no active venting will lead to buildup of flammable vapors within the enclosure. The commenter stated that this concern is based on their experience with experimental curtains that were installed to evaluate reduced air-flow over pultrusion baths. According to the commenter, the curtains did reduce air-flow, but significant increases in styrene concentrations within the "enclosures" were observed. The commenter requests consideration of a change in the regulation that would allow active venting of one or two enclosure head space volumes immediately prior to opening of the enclosure. The commenter states that this limited venting could be automated, and does not expect an increase in emissions because the head space volume becomes a fugitive emission source whenever doors are opened anyway. The commenter believes that this change would facilitate compliance with OSHA regulations and provide an extra measure of safety without significant environmental impact.

Response: The lower explosive limit (LEL) for styrene is approximately 11000 ppmv. The 25 percent LEL level would be over 2750 ppmv. We have no data to suggest that styrene concentration inside wet area enclosures reach this level. Therefore, we have not modified the final rule to allow venting of the wet area enclosure.

12.4 New Sources

Comment: One commenter (IV-D-22) is concerned that control of new sources needs more flexibility than is currently provided with capture-and-control, which is too expensive and has environmental and safety drawbacks, and direct die injection, which lacks broad applicability. Another commenter (IV-D-26) does not consider direct die injection to be a feasible control method for new sources.

Response: We are bound by statutory requirements to set the MACT floor for new sources based on the best controlled similar source. Capture and control achieving 95% reduction has been successfully demonstrated and the floor cannot be less stringent than 95 percent.

Comment: Two commenters (IV-D-98; IV-D-26) note that wet area enclosures should be allowed for new sources as well as existing sources. According to the commenters, EPA has not explained why new sources are not expected to need wet area enclosures. The commenters believe that wet area enclosures are the only practical demonstrated control technology for many pultruded products, and new sources making these products will need to use wet area enclosures to comply with the rule.

Response: Under the proposed rule, new sources are required to achieve 95 percent emission reduction. This reduction level is the MACT floor based on the available data. Wet area enclosures do not achieve the same level of control (i.e., they do not achieve 95 percent reduction). Therefore, we have not added wet area enclosures to the rule as an option for new sources.

13.0 SHEET MOLDING COMPOUND (SMC) MANUFACTURING

13.1 95% Capture and Control

13.1.1 Do not require

Comment: One commenter (IV-D-98) requests that capture-and-control not be required for sources engaged in SMC manufacturing. The commenter states that EPA's proposal for control is based on one source and, according to the commenter, that source has found that they cannot operate the SMC operation and comply with Method 204 and the source has asked the state to amend the permit and remove the requirement for a total enclosure.

A second commenter (IV-D-28) adds that his SMC operation is permitted by Ohio EPA as a PTE with all emissions vented to a thermal oxidizer. Due to a variety of changes, including ownership changes and installation of a second SMC machine, the facility has submitted an application for a modified Permit to Install that would not require a PTE. The second machine can only be operated with a large overhead door open to allow for movement of raw materials and finished product in and out of the room. This permit application has been under review for over 2 years. Ohio EPA has asked the facility to install pressure differential monitors near each door to prove PTE. These monitors will cost nearly $100,000 to purchase and install, plus annual costs to maintain the chart recorders. The PTE itself is also expensive to maintain. Holes around pipes must be resealed regularly, eight doors must be constantly maintained to ensure a tight seal and automatic closure, and air make-up units are required to ensure that air flows into the SMC room and not out when doors are opened. The thermal oxidizer is also expensive to maintain. Annual operating costs are over $150,000 in natural gas and nearly $100,000 in electricity. The concentration of pollutants sent to the oxidizer is much lower than the level necessary sustain combustion without natural gas. According to the most recent stack test, the feed rate to the oxidizer is only 167 ppm from the SMC area and the flow rate into the oxidizer is 5,000 acfm. The commenter included styrene concentration test results showing an average concentration of 45 ppm. Samples conducted to monitor actual employee exposure show results ranging from 26 ppm to 29 ppm. If the requested permit is issued, the capture efficiency is estimated to be 55% to 70%. The remainder will be vented to the atmosphere.

Response: For existing sources, the final rule does not require capture and control for SMC manufacturing. For new sources, however, the floor is 95 percent reduction and we do not have the flexibility to change the floor. Most of the comments raised by the commenters relate to the cost of PTEs and thermal oxidizers. However, costs may not be considered in setting the floor. Additionally, the problems with compliance noted by one commenter do not, in themselves, indicate that new sources cannot be designed and operated to meet the 95 percent control requirement. For example, the facility states that they must open a large overhead door to operate their second SMC machine. In a new facility, the plant layout can be designed where large doors are not required to be continually open. Therefore, the final rule retains the requirement of 95 percent capture and control for SMC manufacturing at new sources that exceed the 100 tons per year of HAP emissions threshold.

13.1.2 Threshold level

Comment: One commenter (IV-D-24) requests that the emission level above which add-on controls are required be increased from 100 to 250 tpy for SMC manufacturing operations. The commenter points out that SMC operations are one of the most efficient methods of producing reinforced plastics and that SMC operations are considered best practice, representing an effective pollution prevention technique for minimizing emissions associated with the production of reinforced plastics. The commenter presents a demonstration of this by comparing the uncontrolled emissions from a typical SMC operation, which ranges from 15 to 30 lbs/ton, versus open molding proposed limits, which range from 83 to 536 lbs/ton. According to the commenter, SMC operations require a significantly larger capital investment than open molding operations and the standards must provide incentives and rewards for such a financial commitment to produce plastic products more efficiently.

Response: For existing sources, the requirement for capture and control has been deleted and there is no longer a threshold level. Thus, this comment is moot as it applies to existing SMC manufacturing facilities. For new sources, however, the final rule retains the 100 ton per year emissions threshold level as was proposed. This threshold is based on emissions to the atmosphere and not on the efficiency of any particular process. In addition, we are not directed by the Clean Air Act to develop standards to provide incentives and rewards for more efficient processes. Therefore, we have not changed the threshold level for new sources in the final rule.

13.1.3 Alternative emission limits

Comment: One commenter (IV-D-24) notes that an alternative to meeting the 95% HAP emission reduction requirement is provided and requests that an alternate emission limit be provided for SMC manufacturing. The commenter states that the basis for this request is that SMC manufacturing operations should be provided the same alternative emission limits as its competitors. An alternative emission limits allows SMC manufacturers to utilize pollution prevention efforts that have already been implemented and encourages the use of future pollution prevention efforts. SMC operations must be provided the option of achieving the emission limits through pollution prevention efforts and air pollution control devices.

Response: For existing sources, the 95 percent requirement is no longer applicable and therefore it is unnecessary to develop alternative emission limits for existing SMC manufacturing facilities. However, the 95 percent requirement is retained for new SMC manufacturing facilities emitting more than 100 tons per year of emissions. We believe that the commenter's request to provide an alternative emission limit for SMC manufacturers is reasonable and have incorporated a HAP emissions limit of 2.4 lb/ton as a compliance alternative to the 95 percent control requirement in the final rule.

13.2 Work Practices

13.2.1 Doctor boxes

Comment: A number of commenters (IV-D-98; IV-D-101; IV-D-94; IV-D-24; IV-D-28; IV-D-35; IV-D-43; IV-D-27) noted that the requirement to cover doctor boxes should be deleted because the boxes have to be open for machine operators to monitor paste levels. According to the commenters, visual inspection is needed to maintain the proper level of SMC in the doctor box and make manual adjustments to the flow of SMC. Commenter IV-D-101 notes that level gauges have proven unreliable. Commenter IV-D-28 notes that an EPA visitor observed that doctor boxes at the facility were "covered", but in fact, lids cover most of the troughs that connect the SMC mixer with the doctor boxes but the boxes themselves are completely exposed. This commenter requests that the requirement be reworded to something more closely resembling actual practice such as "partially covered troughs." Commenter IV-D-94 adds that plastic covers would quickly discolor from styrene vapors and glass covers would be fragile and would require constant cleaning with solvents because dried paste is particularly difficult to clean without a HAP containing or other strong solvent. This commenter also notes that conversations with other major SMC manufacturers (Budd, Premix, CMC) indicated that none are currently using covered doctor boxes and this requirement should not be used to set the floors for existing or new sources.

Response: We reviewed the basis for the MACT floor by reviewing all of the data available prior to proposal and contained in the public comment letters. On the basis of this review, we discovered that the MACT floor is not covered doctor boxes. Further, based on the technical difficulties noted by the commenters for enclosing doctor boxes, we have determined that enclosed doctor boxes are not a feasible above-the-floor control option. Therefore, we have dropped this requirement from the final rule.

However, during this review and on the basis of discussions with industry, we have determined that using covered or closed resin transport systems that deliver the resin to the doctor box represents a floor work practice requirement. Therefore, we have included this provision in the final rule.

13.2.2 Folded edges

Comment: A number of commenters (IV-D-98; IV-D-27; IV-D-24; IV-D-35; IV-D-101; IV-D-94) indicated that folding or sealing edges on SMC causes quality problems and requested that the requirement be removed. Several of these commenters noted that an alternative of extending both layers of the carrier film beyond the edge of the SMC should be allowed. According to the commenters, this practice prevents SMC from being exposed to air and allows SMC manufacturers to satisfy the needs of their customers.

Commenter IV-D-94 notes that at one of their facilities they fold the edges of the SMC but it only produces, stores, and dispenses the SMC in rolls. According to this commenter, when SMC is festooned (lapped) into boxes, the folds tend to open during the festooning process. The commenter states that folding is a quality measure to protect edges from drying. The commenter expects that, while emissions from folding edges is unknown, reductions would be negligible based on the very small edge surface area.

Response: We reviewed the basis for the MACT floor by reviewing all of the data available prior to proposal and contained in the public comment letters. On the basis of this review, we discovered that the MACT floor is not folded edges. Further, based on the technical difficulties noted by the commenters for folding edges where the SMC is festooned, we have determined that folded edges are not a feasible above-the-floor control option. Therefore, we have removed this requirement from the final rule.

13.2.3 Nylon film

Comment: Several commenters (IV-D-98; IV-D-43; IV-D-35; IV-D-28; IV-D-27) indicate that a nylon containing film is used. These commenters request a change in the film requirement wording to "nylon or nylon containing film" (instead of "nylon film or film with an equal or lower permeability to styrene than nylon" because there is not an approved method to determine styrene permeability. According to the commenters, any appreciable loss of styrene will cause quality problems.

Response: We have reviewed the basis for the MACT floor by reviewing all of the data available prior to proposal and contained in the public comment letters. On the basis of this review, we discovered that the MACT floor is more appropriately described as using "nylon-containing film." Industry representatives have indicated that such film may contain from 25 to 100 percent nylon and that all such films perform equally in preventing styrene from migrating out of the SMC, but we do not have sufficient data or information to prescribe a minimum nylon content. Therefore, we have revised this work practice requirement in the final rule to require the use of "nylon-containing film," which would include nylon film, but have not identified a minimum nylon content for the film.

14.0 BULK MOLDING COMPOUND (BMC) AND MIXING

14.1 Definition and Applicability

14.1.1 Phrasing "BMC/Mixing"

Comment: Three commenters (IV-D-109; IV-D-98; IV-D-94) suggest that the phrase "BMC manufacturing/mixing" should be changed to more clearly refer to both "mixing" and "BMC manufacturing." The commenters point out that, as written, the rule could be read to apply only to mixing operations that are an integrated part of a BMC manufacturing process. The commenters note that mixing is a preliminary step in the BMC manufacturing process. The commenters believe the proposed rule would be clearer if the language was changed to refer to "mixing and BMC manufacturing."

Response: We agree with the commenters and have revised the wording of the rule to reflect their suggestion.

Comment: Commenter IV-D-22 understands that these mixing MACT requirements apply to all mixing operations, including BMC, and requests clarification of that understanding.

Response: The commenter is correct that the mixing MACT requirements apply to both mixing and BMC manufacturing.

14.1.2 BMC definition (what is included)

Comment: One commenter (IV-D-94) suggests that BMC Compounding include the process of extruding and conveying. The commenter notes that they have a facility in California with a BMC mixing, compounding, and molding operation. This system also has a covered conveyor system, which feeds the BMC from the compounder into an extruder. The extruder forms the BMC into a compact cylindrical shape, which is cut to convenient size and conveyed to covered storage boxes. These pieces are used to make up charges at the press. The conveyor between the compounder and extruder is covered to reduce styrene exposure to the workers.

Another commenter (IV-D-35) stated that BMC processes should include extruding, bagging, and rolling and therefore Section II.C. "What is the Affected Source?" should be modified to include these secondary operations as part of the BMC process so that local agencies will have a complete reference for all operations.

Response: We have insufficient information on these secondary operations associated with the BMC process to evaluate emissions, levels of emission reductions, and costs of control. Therefore, we have not revised the definition of the affected source for BMC.

14.1.3 Vacuum mixing

Comment: One commenter (IV-D-94) believes that vacuum mixing should not be considered active venting. In the commenter's California facility, the covered BMC conveyor requires active venting sufficient to create a negative pressure in the enclosure. Prior to compaction in the extruder the BMC surface area on this short conveyor resulted in excessive styrene worker exposure, requiring the use of respirators. Occasionally a door in the conveyor cover must be opened to clear jams or inspect materials. The negative pressure created by active venting is necessary to protect the workers. OSHA requires employers to protect workers using engineering controls. The active venting removes vapors that would have entered the room and ultimately emitted into the outdoor atmosphere through building ventilation as required by Cal OSHA (minimum of 1 cu. ft./minute per sq. ft. of floor space). Federal OSHA has the same requirement for areas where flammable liquids are handled or dispensed. The packing conveyor does not require covering and venting because the extruded BMC is compacted, has a low surface area, and area ventilation is sufficient to protect the workers.

Response: The no active venting requirement applies specifically to the BMC mixer and not to the secondary operations, such as the conveyor. If through the active venting of a secondary operation, such as the conveyor, a negative pressure (vacuum) is created in the BMC mixer, we do not consider that active venting of the BMC mixer and the rule allows such an arrangement.

14.2 Work Practices

14.2.1 No visible gaps

Comment: Several commenters (IV-D-98; IV-D-43; IV-D-109; IV-D-101; IV-D-28) request that the requirement for "no visible gaps in mixer covers" be revised to allow reasonable and necessary openings. Commenter IV-D-98 states, mixing vessels must have some opening or vents to allow air to enter or leave the vessel when materials are added or removed, or when the contained material expands or contracts due to changes in temperature. Commenter IV-D-98 points out that the rule provides for such openings in wet area enclosures for pultrusion operations and for the same reasons, such openings and clearance are needed for mixing operations. In summary, this commenter requests that the rule allow 1 inch of clearance around mixing shafts and instrumentation for mixers and storage containers. Two additional commenters (IV-D-109; IV-D-101) also note clearance for mixing shafts and other instrumentation are essential and also suggest allowing a gap of one inch.

Commenter IV-D-43 states that clearance for the mixing shaft and other apparatus, such as instrumentation, is needed. According to Commenter IV-D-43, with the shaft spinning at such a high rpm, any slight shimmy with no clearance will create an unsafe condition. This commenter envisions a two piece cover that cannot be secured to the shaft in any way and will require at least 1 inch of clearance.

Commenter IV-D-28 notes that the proposed rule requires facilities to "use mixer covers with no visible gaps present in the mixer covers, do not actively vent mixers to the atmosphere, and keep the mixer covers closed during mixing, except when adding materials to the mixing vessels." The commenter's current operations comply with this requirement for the main mixer, but several holding tanks are continuously agitated to prevent settling. The commenter describes these tanks as having covers with visible gaps around the agitator. The commenter requests that the agency add clarifying language to the definition of mixers to exclude tanks that are only agitated to prevent settling.

Response: We have reviewed the basis of the proposed rule by reviewing all of the data provided by industry in their responses prior to proposal. Based on that review, we found that the proposed rule is more stringent than the floor and that to allow some visible gaps around shafts, etc. is consistent with the data available to set the floor. Therefore, we have revised the final rule to allow no more than one inch of visible gap around mixing shafts and any required instrumentation.

With regards to the request by Commenter IV-D-28 to exempt tanks that are agitated only to prevent settling, we believe that the revised rule to allow one-inch clearance is sufficient such that such an exemption is not warranted. Therefore, the final rule does not include an exemption for tanks that agitated only to prevent settling.

14.2.2 Number of charges

Comment: One commenter (IV-D-22) notes that in their process BMC is transferred from sealed barrier bags to a hopper on the injection machine; the hopper is capable of containing several injection molding "shots" of BMC material; and the BMC feed to the mold is completely enclosed within a barrel and screw or plunger mechanism and injected into a closed mold. The commenter requests that this operation satisfy the MACT requirement for injection molding provided the hopper is fitted with a lid and closed with no visible gaps whenever material is not being added.

Response: We agree that the rule should accommodate the situation described by the commenter and have modified the rule to allow for such process operations with the provisions as described by the commenter.

14.2.3 Venting

Comment: The commenter (IV-D-101) notes that the proposed rule states that facilities cannot actively vent mix tanks to the atmosphere, but "active venting" is not defined. If included, the term needs a definition.

Response: We have changed this statement to read "close any mixer vents when actual mixing is occurring, except that venting is allowed during addition of materials, or as necessary prior to adding materials or opening the cover for safety". Therefore, a definition of active venting is no longer required.

Comment: Several commenters state that the rule should allow active venting under three conditions – (1) when adding filler, (2) when using nitrogen blanketing, and (3) prior to opening a mixer. One commenter (IV-D-101) claims that without the inclusion of active venting (and adequate clearance with the mixing shaft and other apparatus), they cannot maintain their position in the market or continue to grow.

Adding Fillers. Commenter IV-D-101 states that when powders are added to mixing tanks, vent gases are directed to a dust collector to protect employees. The commenter states that you cannot capture dust without actively venting. The commenter suggests that the proposed rule allow active venting as part of the material addition process.

Commenter IV-D-43 adds that when materials are added to an enclosed vessel and in other mixing processes the dust created when adding fillers makes it necessary to have a dust collection system to maintain employee safety and that when materials are added to an enclosed vessel there has to be some type of venting to remove the displaced air.

Commenter IV-D-94 notes that in covered mixers and BMC compounding equipment active venting is required during addition of filler materials. When attempting to add filler into the mix vessel in a new covered mixing system in North Carolina, the commenter found that displaced air laden with filler dust was entering the mix room through tiny openings in the mixer cover. This was creating a worker dust hazard and a housekeeping problem. This worker hazard becomes even more critical when earthen fillers containing silica are used. The dust collector is controlled to draw air only when the filler is being added. This commenter requests that the final MACT standard allow active venting of mixers and BMC Compounding equipment during the addition of filler and other dust containing material.

Commenter IV-D-98 claims that active venting is required when adding fillers, to prevent release of dust into the mixing facility.

Nitrogen Blanketing.

Two commenters (IV-D-35; IV-D-94) actively vent covered mixers at very low flow through a dust collector. The active flow results from nitrogen flowing through the air space for safety reasons (to prevent vapor buildup). Based on stack test results, emissions under these conditions were found to be very low (0.000292 lb styrene/lb styrene available). For these reasons, active venting for safety reasons, using an inert gas purge, and at low flow should be allowed for covered mixers. Commenter IV-D-98 states that some mixing operations use nitrogen blanketing for safety (to prevent formation of flammable atmospheres); sources have incentive to limit use of nitrogen blanketing because of cost, so emissions will be negligible.

Prior to Opening Mixer.

Commenter IV-D-101 request that the rule allow venting just prior to adding materials to clear out vapors prior to opening covers or venting just after adding powders to capture residual dust in the vapor space.

Commenter IV-D-22 requests that the venting requirement be modified to allow active venting of one to two head space volumes prior to opening the enclosure to improve worker safety, odors, and vapor level control. This limited venting has no adverse impact on total emissions because the head space is eventually lost as fugitive anyway.

Commenter IV-D-94 notes that a small headspace sweep is advisable prior to removal of the mixer cover to reduce the risk of an explosive atmosphere. This commenter requests that the final MACT standard allow for a headspace sweep prior to opening the cover for the safety reasons and that vents be permitted to allow movement of air when adding or removing material from mixing or storage vessels to accommodate temperature changes.

Commenter IV-D-98 states that active venting is sometimes needed at the end of the mixing cycle in preparation for opening of covers for removal of material, to prevent excessive exposures of workers to vapors or dust. The amount of air actively vented at the end of mixing cycles can be limited to the volume equivalent to two head spaces. According to the commenter, an equivalent volume will be released anyway, and active venting will just prevent the release from entering the work area.

Response: We believe that most HAP emissions that result from mixing operations occur when active mixing is taking place. Also, based on the data used to set the MACT floor, the facilities that responded that mixers have no active venting meant that the mixer was covered and not vented during mixing. As a result, we have changed the rule requirement to read "close any mixer vents when actual mixing is occurring, except that venting is allowed during addition of materials, or as necessary prior to adding materials or opening the cover for safety". Because we have removed the term "active venting", no definition of this term is required.

Comment: Two commenters (IV-D-109; IV-D-94) suggest that the rule should allow for sufficient active venting of material conveyor enclosures to protect workers and reduce fire and explosion hazards. According to the commenter, covered conveyors reduce worker exposure to styrene and requires active venting to maintain negative pressure over the conveyor to prevent excessive styrene migration into the room. The commenter claims that any attendant emissions increase from this process would be negligible.

Response: Conveyors are not part of the affected source for BMC and therefore we are not addressing this comment.

14.3 Capture and Control

Comment: One commenter (IV-D-98) notes that covers should be required instead of add-on control for larger mixing operations. According to the commenter, covers can reduce emissions by 84.8% to 96%. The commenter then maintains that the incremental reduction from oxidation cannot justify the cost and energy use of control when compared to covers. The commenter notes that there are some facilities in EPA's data base that use add on controls for mixing. However, according to the commenter, the control in all cases is incidental to the use of the add-on control for other operations in the facility. Therefore, the commenter believes that add-on control is not the best control for mixing, and the final rule should require covers instead of add-on controls for all mixing operations.

Response: Although the reasons for why emissions are being controlled is usually irrelevant in considering the setting of standards, we disagree with the commenter's characterization of the control of mixing emissions as "incidental." We do not agree that the data provided support the claim of 85 to 96 percent control using covers. Therefore, we have not revised the rule as requested by the commenter. New sources that exceed the 100 tpy HAP emissions threshold will still have to cover the mixing tanks and control their HAP emissions from mixing by 95 percent, which is the new source floor level of control.

15.0 CLOSED MOLDING

15.1 Definition and Applicability

Comment: Compression molding is defined in the proposal as "a closed molding process for fabricating composites in which composite materials are placed inside matched dies that are used to cure the materials under heat and pressure without exposure to the atmosphere." Two commenters (IV-D-98; IV-D-22) suggest that the definition of compression molding should be changed to include a process where resin paste is added to the reinforcement at the press, and to include the use of in-mold coating (IMC). According to the commenters, the resin paste process is similar to the use of SMC and BMC because there is no exposure of HAP containing material except where the charge is being prepared and placed in the mold. The controls for this process are the same as those available for SMC and BMC – limiting the quantity of exposed materials to that which is required for one press cycle. IMC is a process where HAP-containing materials are mixed with catalyst, and then injected into the mold cavity after the molding cycle has started. IMC reduces the need for post-mold coating (painting) operations. The controls available for IMC are the same as those generally available for mixing operations. Commenter IV-D-22 molds flat composite sheet used in electrical insulation and power distribution applications. Liquid resin paste is stored in covered totes at each compression molding machine and is applied to precut fiberglass just in time for the next cycle. No more than one wet lay-up is produced per press cycle. The commenter requests that the definition allow for resin paste application at the molding machine.

Another commenter (IV-D-94) notes that preform or IMC molding is commonly used by themselves and other companies, and simply applies the paste at the press just prior to closure instead of in a compounding step (as in SMC or BMC). The commenter states that failure to include this process would be overlooking a process in common use since the 1950s, which is used to produce a large portion of MFG's high strength products. This commenter adds that recent EPA focus on the open molding processes may have inadvertently created this oversight, noting that, earlier in the MACT development, EPA visited one of the commenter's facilities where this process is used. It is currently in use in numerous facilities. The paste mixing process uses the same materials and mixing equipment as the SMC and BMC production prior to compounding. This process is appropriately covered under the mixing source category in the proposal.

In-mold coating (IMC) is a process where a reactive coating is catalyzed, mixed, and injected into the mold during closure. It eliminates or reduces finishing and primer spray painting for our heavy duty truck parts. IMC injection should be considered part of the Compression Molding process with no control requirements. Covered mixers and inline mixers are used to mix the IMC, and are adequately addressed in the mixing process requirements.

Response: We have modified the definition of closed molding to include these processes.

15.2 Work Practices

Comment: Several commenters (IV-D-24; IV-D-22; IV-D-94; IV-D-43; IV-D-109; IV-D-98) request that the work practice standard requiring closed molding operations to uncover, unwrap, or expose only one charge per mold cycle per machine be revised so that a charge is defined as the amount of materials required to charge the mold(s) for each machine cycle. Some machines have more than one mold and limiting the amount of material would cause a bottleneck in production capacity. Commenter IV-D-98 adds that the rule should allow multiple charges to be loaded into the hopper provided the hopper is kept covered between loading operations and that the unlimited use of slitting machines to unwrap, cut, and prepare charges should be permitted, provided that the charges are then covered or placed in a closed container prior to use at the press.

Response: We agree that where multiple charges are required for a single mold cycle, the rule should allow them to be prepared at the same time and held in a closed container prior to use. Therefore, we have revised the rule to redefine “charge” per the commenter’s suggestion and to require such multiple charges to be kept covered, as for single charges, until used.

Based on a meeting with industry, we have become aware of the use of robotic loading arms in this industry. Such robotic arms can not be covered as can those that are loaded into the press manually. Therefore, the final rule is providing an exemption from the “covered” requirement for charges that are loaded into presses using robotic loading arms. We have also modified the rule to allow the use of hoppers and slitters, provided the charges are then covered or placed in a closed container prior to use at the press.

16.0 POLYMER CASTING

Comment: Many commenters (IV-D-2; IV-D-3; IV-D-4; IV-D-5; IV-D-83; IV-D-84; IV-D-85; IV-D-87; IV-D-88; IV-D-89; IV-D-91; IV-D-92; IV-D-99; IV-D-100; IV-D-102; IV-D-104; IV-D-106; IV-D-113; IV-D-115) note that, under the proposal rule, polymer casting mixing operations in containers of 21 gallons or less may be open while active mixing occurs and requested that this exemption be increased. The commenters note that many are using 350 lb containers, which is equivalent to 21.6 gallons. According to the commenters, the mixing process uses an electric mixer and requires frequent manual scraping of the sides and a requirement to cover the mixer would present a productivity disadvantage.

Response: Changing the volume exemption from 21 to 21.6 gallons would be consistent with the intent of the proposed exemption. The surface area of exempt mixers is the more important parameter, because it is directly related to the amount of HAP emissions that would occur. Therefore, we have retained this exemption in the final rule, but have changed the exemption parameter to 500 square inches of surface area. This change should allow the 21.6 gallon mixers, commonly used in this industry, to be exempt from the requirement to cover the mixer.

17.0 STORAGE

17.1 Venting

Comment: One commenter (IV-D-94) notes that worker safety, fire prevention, and product quality requirements necessitate limited active venting of storage vessels, covered mixers, and material conveyance enclosures. Some facilities store resins in bulk tanks with passive atmospheric venting. Problems arise from resin contact with the water vapor in the atmosphere. Polymerization occurs on side walls, vents, and transfer pipes. Vents and especially conservation vents can plug, threatening the tank's structural integrity. Nitrogen blanketing is used by some facilities to solve these problems. Nitrogen blanketing is also used to inert the headspace in bulk storage tanks for fire prevention. The fire insurance underwriters require nitrogen blanketing for aboveground storage tanks containing styrene monomer in the commenter's Ohio facilities.

Another commenter (IV-D-28) requests clarifying language to allow passive vents for bulk storage tanks. The vents are small to allow for breathing of the tanks as they are filled and emptied. These vents are required under OSHA to prevent pressure build-up and to reduce the chances of explosions and major leaks or spills. The annual breathing losses from all eight of this commenter's tanks are less than one (1) ton per year.

A third commenter (IV-D-98) suggests that the rule should be changed to allow venting in storage vessels.

Response: We did not intend to prohibit bulk storage tanks from having required vents to the atmosphere. The rule has been modified to clarify this. However, it is not our intent to allow venting in all storage vessels. Thus, the final rule continues to prohibit venting of storage vessels other than bulk storage tanks.

17.2 Closed or Covered

Comment: Commenter VI-D-98 notes that the proposed rule requires storage containers to be kept closed or covered except when adding or removing materials. The commenter claims this provision is not workable.

Response: We believe that covering storage containers is a simple and cost-effective way to reduce styrene evaporation. We also note that over 200 facilities that reported information on storage stated that storage containers are covered or closed. This provision has been retained in the final rule.

18.0 CLEANING

18.1 HAP Cleaners - Closed System or Covered Tank

Comment: Several commenters (IV-D-101; IV-D-98; IV-D-22; IV-D-27; IV-D-132) request that HAP cleaners be allowed when used in a closed system or covered tank. Commenter IV-D-101 states that cleaning of mix tanks is necessary between different batches due to the variability of resin types and colors. The commenter uses styrene as a cleaning solvent because it is a component of all resin systems, and therefore there are no contamination issues. According to the commenter, it is very difficult, if not impossible. To completely remove all cleaning solvents from tanks that are permanently installed with piping, pumps, etc. This commenter, therefore, recommends modifying the proposed rule to allow tank rinsing and cleaning using styrene only when used in a closed system or the tank is covered. The commenter notes that non-HAP containing solvents can still be used to clean parts in separate parts washers or to clean equipment off-line.

Commenter IV-D-22 notes that the current proposal preamble states: "We propose not to regulate HAP containing solvents used for cleaning cured resin and gel coat from application equipment because no means for reducing HAP emissions are known. Cured resin or gel coat within a gun is usually the result of operator error. An aggressive solvent is needed and no low HAP alternatives are available." This commenter states that they have eliminated the casual use of HAP solvents for cleaning, but the cleaning of cured resin from tools, spreader heads, tote interiors, mold components, pultrusion guides, etc. is as difficult in resin mixing, closed molding, and pultrusion as it is in the spray gun used in open molding. The commenter states that they have built two closed systems using HAP materials to provide the aggressive cleaning needed for these components and that neither system is actively vented during the cleaning cycle, but are instead vented prior to opening the covers. The commenter claims that emissions are nil compared to open cleaning. The commenter, therefore, requests that the definition of "application equipment" be expanded to include the types of devices mentioned above and/or that the use of HAP cleaners be allowed in closed systems.

Commenter IV-D-27 states that, at one of his plants, styrene is the only solvent that can be used to clean the closed mixers during the color and/or grade changes and to flush the SMC lines in a closed loop system, where emissions are insignificant. The commenter notes that styrene is a key ingredient for all grades of SMC and use of any other solvent would create contamination and quality problems.

Commenter IV-D-132 also notes that they use styrene in a closed system to purge plumbing in their process. The commenter states that after the "cleaning" styrene is used, it is reintroduced into their SMC process as a raw material component. The commenter states that the only other cleaner they have found to be as effective is methylene chloride, which they have no intention of using again. Therefore, the commenter requests that EPA modify the rule to allow use of styrene for cleaning as used at their facility.

Response: The proposed rule allowed the use of HAP cleaners to remove cured resin from application equipment because of the difficulty associated with removing the cured resin. One commenter in particular identified other equipment used in the process on which cured resin may occur. All of the commenters stated that they wished to use styrene-containing cleaning solvents in closed systems to clean various components and vessels. We note, as the commenters have, that styrene is the main HAP used in the RPC industry and can be re-used in the process without "contaminating" the end products. Therefore, we believe that the commenters' requests are reasonable and have modified the final rule to expand the definition of "application equipment" and have also modified the rule to allow the use of styrene-containing cleaners in closed systems (including covered tanks).

18.2 Table 4 Clarification

Comment: One commenter (IV-D-73) points out that, while the preamble states that solvents used for cleaning cured resin or gel coat from application equipment are not being regulated because we know of no means of reducing HAP emissions, Table 4 of the rule states that only HAP-free cleaning solvents may be used. The commenter suggests that a footnote be added to Table 4 that states "HAP containing solvents used for cleaning cured resin or gel coat from application equipment are not subject to this subpart."

Response: We agree with the commenter that the Table 4 in the rule needs additional clarification and have additional language into the table that makes it clear that HAP-containing solvents may be used to clean application equipment.

19.0 WORK PRACTICES

19.1 Remove for Those Complying with 95%

Comment: One commenter (IV-D-24) requests that the requirement for work practice controls be removed for facilities required to comply with the 95% emission reduction requirement. The commenter states that if facilities are required to install expensive control devices to reduce emissions, then the facility should not also be required to comply with expensive work practice standards. The commenter points out that SMC manufacturing operations having emissions greater than 100 tpy would be required to install a $5 million thermal oxidizer with $50,000 annual operating cost and then would be required to use nylon film at a cost of $500,000 per year. The commenter claims that the use of work practice standards provide very little added benefit if a control device is already present to destroy those emissions. Furthermore, according to the commenter, the cost per ton of emission reduction will be extremely high for the work practice standards because of the limited emission reduction when a control device is already required. The commenter then illustrates this as follows: If the use of nylon film provides at best an additional 10% reduction in emissions beyond the 95% reduction from the air emission control device for a facility emitting 100 tpy, the cost per ton of additional emission reduction equates to $1,000,000 [($500,000/(100*(1-0.95)*10%)].

Response: For existing SMC manufacturing facilities, the points raised by the commenter are no longer an issue as the 95% control requirement has been removed from the final rule. For new SMC facilities, we have retained the 95% control requirement for those facilities emitting more than 100 tons per year. The incorporation of two work practices in the final rule (use of nylon-containing film and covered or closed systems for dispensing the resin to the doctor box) are based on the use of these work practices by the best controlled similar source in addition to the 95% control requirement. Therefore, we do not have the flexibility to make the final rule less stringent than the best controlled similar source.

19.2 Operator Training

Comment: One commenter (IV-D-20) expresses concern that the NESHAP does not contain an operator training mandate. Indiana has seen significant financial and environmental benefits from training. The commenter believes all reasonable measures should be taken to reduce emissions and operator training is both reasonable and economical for industry to implement. The commenter suggests adding the following language, which is based on the wood finishing standard:

"Operator training course.

> Each owner or operator of an affected source shall train all new and existing personnel, including contract personnel, who are involved in spray-up, lay-up, and gel-coat finishing. All new personnel, those hired after the compliance date of the standard, shall be trained within six months of the compliance date of the standard. All personnel shall be given refresher training annually. The affected source shall maintain a copy of the training program with the work practice implementation plan. The training program shall include, at a minimum, the following:
>
> (1) A list of all current personnel by name and job description that are required to be trained;
>
> (2) An outline of the subjects to be covered in the initial and refresher training for each position or group of personnel;
>
> (3) Lesson plans for courses to be given at the initial and the annual refresher training that include, at a minimum, appropriate application techniques, appropriate cleaning procedures, appropriate setup and adjustment to minimize finishing material usage and over spray, and appropriate management of cleanup wastes; and
>
> (4) A description of the methods to be used at the completion of initial or refresher training to demonstrate successful completion."

<u>Response</u>: We appreciate the potential effectiveness that can be gained by training operators. Unfortunately, we still do not know how to create a reasonably consistent enforcement/compliance program that ensures the effectiveness is met. We are also concerned about the day-to-day, person-to-person effectiveness of such a program. Finally, we believe that facilities have some incentive on

their own to properly train their employees in order to remain competitive and cost-effective. Therefore, we have not incorporated an operator training program in the final rule.

20.0 NEW SOURCE MACT

20.1 Delete Capture and Control as New Source MACT

Comment: One commenter (IV-D-98) believes that capture-and-control should not be required as new source MACT. They questioned whether or not the facilities that set the new source floor actually meet the requirements of EPA Method 204. The commenter states that the CAA authorizes EPA to apply MACT standards to plants that are "similar" to those that apply the "best" control. The commenter notes that a wide variety of factors contribute to the feasibility of oxidation control at open molding facilities. According to the commenter, the sources sited by EPA in support of its proposed capture-and-control requirement share a number of characteristics that differ in significant respects from other facilities in the industry. The commenter points out that A.R.E. is primarily a metal fabrication operation and that American Standard employs an unusual molding operation and the effectiveness of its control operation is open to serious question. The commenter claims that EPA would have to analyze each of the following factors and set conditions on them in order to make sure that floor requirements apply to "similar" sources:

– size of part processed

– three shifts per day operation

– mechanical resin application

– use of high HAP content resins and gel coats

– use of overhead conveyors

– process layout that accommodates full booth enclosures

– location in cooler climate so doors can be kept closed in summer.

The commenter states that EPA acknowledged these factors in consideration of the Boat MACT and did not require capture-and-control for either new or existing sources subject to the Boat MACT.

The commenter adds that the Clean Air Act requires EPA to document and consider the achievability, costs, and environmental benefits of its MACT control proposals. The commenter points out that, for new sources, the CAA requires MACT to reflect the "emission control that is achieved in practice by the best controlled similar source." Although the law does not expressly define "similar," the only way to define it that makes sense of the statutory framework, according to the commenter, is to define it as "similar in terms of the factors that must be considered in setting MACT" such as achievability, cost of control, non-air quality health and environmental impacts, and energy requirements. The commenter further states that the fact that a source has installed and operated a technology that gets greater HAP reduction does not automatically make that technology the "best" if that technology has other environmental drawbacks that disqualify it. The commenter points out that EPA applied this principle in promulgating MACT standards for chemical recovery combustion at pulp mills. The commenter states that EPA's reasoning in this case is directly applicable to the proposed composites NESHAP. In both cases, according to the commenter, pollution prevention offers superior environmental benefits, pollution prevention will get more effective over time, and a rule that requires add-on control will limit the development of pollution prevention. In summary, the commenter believes that a fair examination of these factors, as the Act requires, shows that capture-and-control cannot be justified as the "best" control for the composites industry.

Response: Our available information continues to support that the appropriate new source floor for facilities that emit 100 tpy or more of combined HAP from their open molding, pultrusion, SMC manufacturing, BMC manufacturing, mixing, centrifugal casting, continuous lamination, and continuous casting operations is 95 percent capture and control for several reasons. First, the term "best control" means best control of HAP emissions. The only other control techniques mentioned by the commenters were the pollution-prevention techniques that make up the existing source floors. The commenters claim that when other environmental impacts of add-on controls are considered, pollution-prevention control techniques are actually superior. They provided examples that showed HAP emissions reductions from pollution-prevention techniques for some facilities of up to approximately 70 percent; however, the actual HAP emissions reductions a facility will achieve based on pollution-prevention techniques will be highly site specific. Also, the highest pollution-prevention HAP emissions reduction examples assume facilities could reduce HAP emissions by enhanced process monitoring, which would reduce materials used. The HAP emissions reductions based on materials-use reductions assumes facilities are not currently using materials as efficiently as they could. There are no data to support this assumption, and the potential for HAP emissions reduction of this type could vary widely. The second example presented by one commenter assumes facilities would use nonatomized gel coat application. However, the same commenter has stated emphatically that nonatomized gel coat application cannot be used at every facility. Therefore, this example cannot be considered to fairly represent the HAP emissions reductions achievable for the industry as a whole.

Our overall estimate of the HAP emissions reduction that would occur with only pollution-prevention techniques is approximately 41 percent for open molding, compared to the significantly higher 95 percent HAP emissions reductions possible with capture and control. The CAA indicates that “best control” in the context of setting floors is the control that achieves the best HAP emissions reduction. Based on this, 95 percent capture and control represents best control for this industry.

Even if we were to consider other environmental impacts of capture and control, 95 percent control would still be considered best control. Calculations provided by one commenter indicates that a total of only 0.15 tons of criteria pollutants are generated per ton of styrene reduction; however, this number appears to be based on one of the three actual operating facilities using add-on controls shown in the commenter’s example. Data from another facility using a concentrator/oxidizer system in the same report showed criteria pollutant emissions of 0.06 tons per ton of styrene emissions reduction. Our estimate at proposal was, on average, this figure is closer to 0.04 tons of criteria pollutants per ton of HAP emissions reduction. Regardless of which number is used, the amount of HAP emissions reduction is significantly higher than any resulting criteria pollutant emissions.

The commenters also cite greenhouse gas effects. They state that 30 tons of greenhouse gases are produced for every ton of styrene emissions reduction.

We reviewed the information that formed the basis of the estimate of greenhouse gas estimates. Based on our analysis, we believe that the estimate of 30 tons of greenhouse gases are produced for every ton of styrene emissions reduction is an overestimate because it is based on examples where the HAP emissions reduction varies between 77 to 84 percent. The rule will require 95 percent HAP emissions reduction. Also, we believe the air flows used in the examples provided by the commenter are higher than will be required for new facilities. Higher air flows result in increased use of natural gas, and higher greenhouse gas emissions. We believe a more accurate number would be approximately 20 tons of greenhouse gases produced for every ton of styrene emissions reduction.

Second, regardless of which number is the most accurate, any contribution of this rule to global greenhouse gas emissions is insignificant. The total greenhouse gas emissions in the united States exceed 6 trillion tons from fossil fuel combustion alone. However, the difference between emissions of styrene from a facility controlled to the 95 percent level, and one controlled using only pollution prevention, is significant to the populations living near an affected facility.

The commenters also stated that the facilities that formed the basis of the new source floor are not "similar sources". We disagree because there are actually three sources within this source category that meet the criteria to set a 95 percent capture and control floor. The commenters point out that three is a small number compared to the 433 facilities in the database at proposal. However, the CAA requires the new source floor to be based on the single best performing similar source. Therefore, only one source is sufficient to set a new source floor as long as we determine it is similar. The commenters stated that the source setting the floors operates three shifts (they shut down on weekends). However, we subcategorized new sources by annual HAP emissions. The reason was that larger sources are more likely to operate more than one shift. Also, since this floor only applies to new sources, the facility can be designed to meet the necessary production rate with three shift operation if the operator desires to minimize control device startups and shutdowns.

The commenters stated that in two cases, the floor facilities have collocated surface coating operations. Our evaluation of these facilities was based only on the reinforced plastic composites portion of the facility. During site visits to these facilities, we determined that these facilities were required to apply to apply 95 percent capture and control to all major processes due to state regulations. This requirement would apply regardless of whether or not the facility had collocated surface coating operations. Also, the presence of the surface coating operations does not result in a more concentrated exhaust stream compared to facilities without surface coating operations. So, there is no technical basis to say these facilities are not similar based on the presence of surface coating operations.

We also reviewed the commenters claim that the facilities that set the new source floor do not actually meet the requirements of EPA Method 204 of appendix M of 40 CFR part 51. Part of that claim was based on the fact that the floor facilities had doors in the PTE that were opened to move parts and materials in and out of the PTE.

One criteria of EPA Method 204 of appendix M of 40 CFR part 51 is as follows: "All access doors and windows that are not treated as natural draft openings (NDO) shall be closed during routine operation of the process". This criteria does not require that these doors and windows be closed at all times. It means that doors and windows must be closed any time that you are not actually moving parts or equipment through them. Therefore, facilities may open doors and windows to move parts in and out of the PTE and still meet the requirements of EPA Method 204.

In addition, we reviewed the compliance detreminations for two of the floor facilities. Our review did not reveal any conditions that would indicate that the requirements of EPA Method 204 of appendix M of 40 CFR part 51 are not being met.

Fabricators must move parts and equipment in and out of PTE in order to operate. We realize that in some situations an access door should be treaded as an NDO. For example, if the access door is used so often that it is almost always open, then it should probably be considered an NDO. We could establish a time limit, but every facility is going to be different, and a specific time limit would reduce the flexibility of the method. We allow the permitting authority to make their own determinations concerning when a door should be considered an NDO. Factors they typically consider are:

- Size of the door
- Location, i.e. is it close to the actual emission points, or far away
- What percentage of time is the door open
- Does the door have hanging plastic strips or an air curtain to reduce the effective area?

A facility would need to submit to the permitting authority the design of the PTE showing emission points, air flows, door locations, and estimated time the doors will be open. It would be up to the permitting authority to approve or disapprove the design. If the design is approved, then it is the responsibility of the facility to build and operate the PTE in accordance with the submitted design.

We recognize that allowing access doors to be opened to move material through them can potentially result in HAP escaping the PTE. We have never stated that meeting the requirements of EPA Method 204 will mean 100 capture of emissions, 100 percent of the time. The method was intended to get as close as we can to 100 percent capture, but still allow facilities to run their production processes in an efficient manner. However, as long as the approved Method 204 design and operating criteria are met, we credit the facility with 100 percent capture.

It should also be noted that 200 feet per minute is a very conservative figure based on the NIOSH industrial ventilation guidelines. So even when doors are open and a facility does not have 200 fpm through all openings, capture efficiency will still be 100 percent if all airflow is inward.

Comment: The commenters stated that the facilities that manufacture large parts using open molding or pultrusion are not similar to the floor facilities that are the basis of the capture and control requirements for the new source floors. They stated that the facilities used to set the 95 percent capture and control requirement only manufacture small parts and, therefore, should not be used to set a capture and control floor requirement for facilities making large parts. They also stated that achieving 100 percent capture is not feasible for large parts sources in these process groups. Though EPA had cited facilities that coated large parts in permanent total enclosures (PTE), coating operations cannot be considered similar to the manufacture of reinforced plastic composites. They suggested that any part with any dimension that exceeds 12 feet be considered a large part and be exempt from capture and control requirements.

Response: After reviewing the comments and available data, we have determined that the facilities currently achieving 95 percent capture and control are not similar to sources producing large parts. At proposal, we noted that we had not identified any facilities in the reinforced plastic composites industry where processes producing large parts, such as storage tanks and swimming pools, have applied 100 percent efficient capture systems, but stated our belief that such PTE were technically feasible based on large PTE in other industries. We reviewed available data on the facilities in our database and found that facilities producing parts over a certain size presented different technical issues from facilities that have successfully incorporated 95 percent capture and control. As noted in the preamble to the proposed rule, one of these facilities has a PTE large enough to produce large parts. However, the air flows and HAP concentrations exiting the PTE at this facility are not the same as would be expected from a facility using a similar sized PTE to capture and control emissions from large parts production.

We also noted in the preamble to the proposed rule that surface coating operations for very large parts (as large as ocean going ships) had successfully applied PTE. However, we agree that coating operations and reinforced plastic composites operations are not similar sources. Reinforced plastic composites production typically requires more workers per part due to the necessity to both apply and roll-out the resin. Also, large parts are continuously laminated until completion rather than coated in sections.

This difference in sources, while applicable to evaluating floors based on capture and control, does not exist in the case of floors based on pollution-prevention technologies such as the use of low-HAP materials and nonatomized resin application. For that reason, we did not differentiate between large and small parts when setting floors based on pollution-prevention control techniques for either new or existing sources.

Because we determined that capture and control was not the appropriate floor for large parts manufacture, the floors for these specific operations are now the same as the floors for existing operation, which are emission limits based on the use of low-HAP materials and nonatomized resin application.

However, we do not agree with the commenter's suggested definition of large part, because it would exempt parts from capture and control requirements where those requirements have already been demonstrated. The largest part volume from an open molding facility where 95 percent capture and control is demonstrated was approximately 250 cubic feet, with the largest surface area of any single side of 50 square feet. For pultrusion facilities that have 95 percent cpature and control, the largest part manufactured has an outside perimeter of 24 inches, and up to 350 reinforcements. Parts that exceed any of these criteria are considered large parts.

20.2 Stringency for Sources Emitting Less Than 100 tpy

Comment: One commenter (IV-D-78) opposes allowing control requirements for new sources emitting less than 100 tpy to be the same as those for existing sources because a new site has the opportunity to design and incorporate pollution prevention and control strategies that would be cost-prohibitive for existing sources to implement. The commenter recommends that EPA consider more stringent requirements for new sources and are willing to discuss how these sources can be addressed, including smaller sources (through Generally Available Control Technology or other approaches that would not be overly burdensome).

Another commenter (IV-D-76) adds that EPA's analysis indicates that the best controlled facilities have reduced HAP by only 95%, and 95% is most likely the maximum extent of historic regulatory requirements. The commenter notes that EPA looked at the experience of existing facilities to achieve greater than 95% control through add-on control in conjunction with pollution prevention and did not find facilities achieving greater control than that. While the assessment may be correct for what EPA looked at, the commenter states that examining past experience that lacks regulatory drivers for greater control is not the same as examining the present and future potential for control opportunities. The commenter believes that the proposal dismisses the potential for these two control techniques (add-on control and pollution prevention) to be applied to new sources.

Response: We agree that new facilities can more easily incorporate pollution prevention and add-on controls. This is the reason we set the new source floor at 95 percent control for most new sources that emit over 100 tpy, and not at the same level as existing source floors.

Facilities that have incorporated add-on controls tend to be larger facilities. New facilities in this industry can be small operations that operate a limited number of hours and still be major sources. These small sources cannot reliably meet 95 percent capture and control given their limited operating schedules and their potential lack of on-site technical expertise. Therefore, we are not requiring a source emitting less than 100 tpy to meet the 95 percent capture and control level.

We examined whether or not we could specify some other level of control for small sources, but we could not determine what would be an appropriate level of capture and control below 95 percent. We also considered basing new source MACT floors for facilities that emit less then 100 tpy on the single best facility that incorporated pollution prevention. However, as discussed in the preamble of the proposed rule, we believed that using one facility that had the lowest HAP content resins and gel coats was unworkable, unless we could show that all new plants would build the same products as the plants that had the lowest HAP content resins and gel coats.

Given this, we had to determine a threshold value above which 95 percent capture and control is feasible for all new plants, given the diversity of this industry. We selected 100 tpy of actual HAP emissions because above this level facilities tend to operate more hours per year and are better equipped to maintain capture and control systems. Also, at the time we proposed the rule, the smallest facility in the open molding process/product grouping that was permitted at 95 percent capture and control emitted approximately 100 tpy. Therefore, we chose this number as the threshold at which 95 percent capture and control is required.

This was not the only approach we could have taken to subcategorize new sources, nor is 100 tpy the only threshold we could have chosen. For example, we could have subcategorized by annual hours of operation. However, depending on the threshold we set, this could result in large, new HAP emissions sources avoiding the 95 percent capture and control requirements simply by building a larger facility and reducing hours of operation. By tying the requirement directly to HAP emissions, we believe we have taken the most logical approach from an environmental standpoint and an enforcement standpoint. Also, the 100 tpy threshold is a reasonable choice that means that all new large facilities in most of the process/product groupings will have to meet the most stringent HAP emissions control levels.

20.3 New Equipment at Existing Sources

Comment: One commenter (IV-D-78) states that in general they believe that new sources should be subject to new source MACT even if they are added to an existing source. The commenter understands that there are cases in which the new equipment may be incorporated within an existing manufacturing line, making it difficult to employ separate controls (e.g., if all the equipment is controlled at a later end point). The commenter suggests, however, that separate and more specific provisions can be included in the rule to govern such cases.

Response: This comment is only applicable to new source MACT for specified processes that emit over 100 tpy, because below that level, new source and existing source MACT are the same. We believe that, for this particular industry, the ability of a facility to incorporate the capture and control requirements of new source MACT for larger facilities is most closely related to the structure housing the process, not the process itself. Even if there are significant process changes, this by itself would not indicate that the building housing the process has been changed, thereby making retrofit of capture and control systems unfairly difficult compared to a new greenfield facility. We believe that attempting to develop a detailed set of requirements that could cover every situation would be unrealistic.

We agree that this provision may result in small facilities being able to grow significantly without becoming new sources. However, it should be noted that in this rule, we have overridden the portion of the general provisions to 40 CFR part 63 which states that facilities that move are still considered existing. Because we believe the cost and technical feasibility of capture and control are most closely related to the building housing the process, we believe that a facility that moves should be considered a new source because they can plan for capture and control prior to erecting or selecting a new building. Therefore, facilities that would be considered existing sources under the general provisions, will be considered to be new sources under this final rule. Therefore, in this aspect, these final NESHAP are more stringent.

21.0 MISCELLANEOUS

21.1 Another Comment Period

Comment: One commenter (IV-D-54) believes that EPA should allow industry another comment period after the capture-and-control affordability re-analysis is complete. The commenter states that industry should be allowed to comment on the findings of the analysis and the course of action taken by EPA because this issue is critical for the industry and the viability of companies that may be subject to capture-and-control.

Response: We disagree with the commenter that another comment period is required. The changes to the proposed rule, while many, did not require us to provide another comment period because they are a logical outgrowth of the proposed rule. Further, a meeting was held with industry to inform them of the anticipated changes to the rule as the result of the analysis of additional data made available through the public comments and the re-analysis of costs. We believe that meeting was sufficient to receive feedback on what the final rule was anticipated to look like. Therefore, we elected not to provide another comment period.

21.2 Finalize AP-42 Emission Factors

Comment: One commenter (IV-D-78) emphasizes the need for EPA to finalize AP-42 emission factors for the RPC industry. The commenter states that EPA has indicated that three methods are appropriate for estimating emissions and each method is given equal weight. According to the commenter, while the proposal includes a clear mechanism for determining whether production operations are considered major sources, the lack of finalized emission estimating methodology for the source category has created the possibility for false synthetic area sources to operate. The commenter notes that the old AP-42 factors, which EPA withdrew because they underestimated styrene emissions, have been used by many agencies to limit operations through FESOPs and they have been used in PSD and NSR decisions. The commenter maintains that, until new factors are available, agencies will not have an enforceable mechanism to enforce FESOPs and other permits developed using the old emission factors.

Response: The development of AP-42 emission standards is not a required part of this rulemaking. However, this request has been sent to the group in EPA who are responsible for publishing the AP-42.

21.3 Table 7 Corrections

Comment: One commenter (IV-D-75) notes that in Table 7 to subpart WWW of Part 63 - Options Allowing Use of the Same Resin Across Different Operations that Use the Same Resin Type, numbers 5 and 6, the percent HAP content and the point value information are switched. According to the commenter, the columns should be 42.8% HAP with a point value of 144 and 38% HAP with a point value of 110, respectively.

Response: The commenter is correct and we have revised Table 7 in the final rule accordingly to reflect the revised analysis.

21.4 Styrene Health Discussion

Comment: One commenter (IV-D-1) notes that the proposed NESHAP is a technology-based rule intended to reduce emissions of HAP, that the agency does not need to make any toxicological determinations because styrene was listed by Congress as one of the air pollutants subject to 112, and that given the statutory context and data limitations, the toxicological discussion in the preamble is merely background information. Therefore, the commenter suggests that EPA revise the third paragraph of Section I.C. of the proposed NESHAP because it can be misread to suggest that the EPA, rather than the International Agency for Research on Cancer (IARC) has classified styrene as a "possible carcinogen."

Response: While we did not intend to create the impression that EPA, and not IARC, is responsible for classifying styrene as a possible carcinogen, the information in the proposed rule is accurate. At this point, the comment is not pertinent to the rulemaking and we have taken no action on this comment.

21.5 Shift to Smaller Operations

Comment: One commenter (IV-D-54) believes that many companies will stay below the threshold rather than bear the expense of capture-and-control and that the end effect is that industry production will shift from larger to smaller operations with no reduction of emissions.

Response: We agree that there may a shift in new sources to smaller operations in order to avoid capture-and-control system. Large new facilities could still be built incorporating pollution prevention techniques in order to avoid exceeding 100 tons per year. Thus, the extent to which this projected shift will occur depends on the ability of industry to use current pollution prevention techniques and to develop new ones. For existing sources, this shift is less likely to occur because of the relatively few facilities in the two remaining process groupings that still have a threshold level under the final rule. Lastly, we disagree that such a shift would result in no emission reduction, but could certainly result in less emission reduction than if facilities emitting more than 100 tons per year were built.

21.6 SIC Codes

Comment: Three commenters (IV-D-54; IV-D-90; IV-D-98) state that SIC Codes 2821 and 3087 do not apply to companies who make reinforced composite parts and should be removed from the rule. According to the commenters, these codes cover producers of resins and gel coats for the RPC manufacturers and are covered by other MACT standards.

Response: Applicability of this rule is not based on the SIC. Therefore, no changes have been made in response to this comment.